

***LEADER WITH ASSOCIATES
COOPERATIVE AGREEMENT***

LAG-A-00-99-00048-00

IMPLEMENTATION PLAN

10/01/2002-09/30/2003

for

World Wildlife Fund

Submitted: Tuesday, October 01, 2002



Table of Contents

PROJECT MANAGEMENT.....	1
PROJECT OVERVIEW	1
Overall Goal:	1
FY02 accomplishments	1
PROJECT ACTIVITIES	2
<i>Objective I: Mobilize Conservation Action on an Ecoregional Scale</i>	2
Activity 1.1 Maintain EcosNature coordination team.....	2
Anticipated Outputs/Results:.....	2
Level of effort for the activity:.....	3
Activity 1.2 Facilitate activities and communication as opportunities for exchange and learning to advance Ecoregion Conservation implementation	3
Anticipated Outputs/Results:.....	4
Level of effort for the activity:.....	4
Activity 1.3 Facilitate Innovative Grants	5
Anticipated Outputs/Results:.....	10
Level of effort for the activity:.....	10
Activity 1.4 WWF Bolivia establishment and management of the Enterprises for the Americas (EAI) Foundation.....	10
Level of effort for the activity:.....	11
OTHER SPECIFIC PROGRAM DETAILS.....	11
Travel	11
ATLANTIC FOREST ECOREGION	13
PROJECT OVERVIEW	13
Description of site	13
Threats.....	14
FY02 accomplishments	16
PROJECT ACTIVITIES	17
<i>Objective I: Mobilize and coordinate conservation action at an ecoregional scale</i>	18
Activity 1.1: Mobilize and coordinate action in Paraguay for the conservation of the Upper Paraná Atlantic Forest at an ecoregional scale.	18
Anticipated Outputs/Results for Activity 1.1:	19
Level of Effort for Activity 1.1:	19
Activity 1.2: Promote the implementation of the Biodiversity Vision in the Upper Paraná Atlantic Forest Ecoregion, creating a network of Brazilian, Argentine, and Paraguayan institutions sharing the same objectives and conservation strategy.	19
Activity 1.2.1:	19
Anticipated Outputs/Results for Activity 1.2.1:.....	20
Level of effort for Activity 1.2.1:.....	20
Activity 1.2.2:	20
Anticipated Outputs/Results for Activity 1.2.2:.....	20
Level of effort for Activity 1.2.2:.....	20
Activity 1.3: Refine and Monitor the Atlantic Forest Biodiversity Vision	21
Anticipated Outputs/Results for activity 1.3:	21
Level of effort for Activity 1.3:.....	21
<i>Objective II: Protect Key sites and Wildlife Populations</i>	21
Activity 2.1: Establish a policy framework in Paraguay for improved protection and management of existing protected areas	21
Activity 2.1.1: Develop local strategies for protection of core areas.....	21
Anticipated Outputs/Results for Activity 2.1.1:.....	22
Level of effort for Activity 2.1.1:.....	22
Activity 2.1.2: Disseminate the Biodiversity Vision	22
Anticipated Outputs/Results for activity 2.1.2:.....	23
Level of effort for Activity 2.1.2:.....	23
Activity 2.2: Protect and connect core areas identified in the landscape	23
design of the Biodiversity Vision for the Upper Parana Atlantic Forest Ecoregion	23
Activity 2.2.1: Cerro Corá Priority Area.....	25
Anticipated Output/Results for Activity 2.2.1:.....	26
Level of effort for Activity 2.2.1	26
Activity 2.2.2: Mbaracayú priority area	27

Table of Contents

Activity 2.2.2a: Implement an education and law enforcement program to reduce biodiversity loss and breakdown of ecological processes in the Mbaracayú Biosphere Reserve and Jejuí Guasu Watershed	28
Anticipated Outputs/Results 2.2.2a:	28
Level of effort for Activity 2.2.2a:	28
Activity 2.2.2b: Demarcate the remaining forest in the Capiibary Reserve – the first step to its effective protection	28
Anticipated Outputs/Results 2.2.2b:	29
Level of effort for Activity 2.2.2b:	29
Activity 2.2.3: Río Paraná priority area	29
Activity 2.2.3a: Promote communication within ITAIPU Binacional to coordinate the forest restoration program in the Paraguayan and Brazilian portions of this priority area.	30
Anticipated Outputs/Results for Activity 2.2.3a:	30
Level of effort for Activity 2.2.3a:	30
Activity 2.2.3b: Promote the activities of the Itabo Private Reserve as a model for other landowners.....	30
Anticipated Outputs/Results for Activity 2.2.3b:	30
Level of effort for Activity 2.2.3b:	31
Activity 2.2.4: San Rafael Priority Area	31
Anticipated Outputs/Results for Activity 2.2.4:	32
Level of effort for Activity 2.2.4:	32
Activity 2.3: Priorities and policy established for creation of new protected areas - develop a land acquisition strategy to protect core conservation areas.....	32
Anticipated Outputs/Results for Activity 2.3:	33
Level of effort for Activity 2.3:	33
<i>Objective III: Shape regional development to support conservation</i>	<i>33</i>
Activity 3.1: Reduce unsustainable logging practices – certify sustainable commercial	33
Anticipated Outputs/Results for Activity 3.1:	34
Level of effort for Activity 3.1:	34
Activity 3.2: Establish alternative economic activities to increase the value of the forest.....	34
Anticipated Outputs/Results for Activity 3.2:	34
Level of effort for Activity 3.2:	35
Activity 3.3: Assess the current status of the soybean and wood industry in Paraguay and identify key issues to address in a conservation strategy.....	35
Anticipated Outputs/Results for Activity 3.3:	35
Level of effort for Activity 3.3:	36
Activity 3.4: Establish a land use policy framework that supports conservation	36
Activity 3.4.1: Develop community environmental education programs in rural areas and buffer zones of protected areas.	36
Anticipated Outputs/Results for Activity 3.4.1:	36
Level of effort for Activity 3.4.1:	36
Activity 3.4.2: Establish seven conservation easements with private landowners	36
Anticipated Outputs/Results for Activity 3.4.2:	36
Level of effort for Activity 3.4.2	37
Activity 3.4.3: Establish seven private reserves with landowners.....	37
Anticipated Outputs/Results for Activity 3.4.3:	37
Level of effort for Activity 3.4.3:	37
Activity 3.5. Continue a campaign in Paraguay to enforce the Forest Law and increase the participation of civil society in efforts to eliminate illegal logging.....	37
Anticipated Outputs/ Results for Activity 3.5:	37
Level of effort for Activity 3.5:	38
<i>Objective IV: Establish long-term conditions and capacities needed to sustain conservation</i>	<i>38</i>
Activity 4.1: Public awareness of the value of the Atlantic Forest increased.....	38
Anticipated Outputs/Results for Activity 4.1:	38
Level of effort for Activity 4.1:	38
Activity 4.2: Develop mechanisms to provide sustained funding for Conservation	39
actions to achieve the Biodiversity Vision for the Upper Parana Atlantic Forest Ecoregion	39
Anticipated Outputs/Results for Activity 4.2:	39
Level of effort for Activity 4.2:	39
OTHER SPECIFIC PROGRAM DETAILS.....	39
Monitoring & Evaluation.....	40
Financial Sustainability	40
Gender Issues.....	40
Environmental Education & Communication.....	40
Travel	40

Table of Contents

SOUTHWESTERN AMAZON ECOREGION	42
PROJECT OVERVIEW	42
Description of the Site	42
Threats.....	43
FY 02 Accomplishments	44
PROJECT ACTIVITIES	45
<i>Objective I: Consolidation of Amboró-Madidi Corridor.....</i>	<i>45</i>
Activity 1.1: Establishment of Local Participation for the Pilot Area and Technical Advisory Committee for the CAM	46
Anticipated Outputs/Results for Activity 1.1:	47
Level of Effort for Activity 1.1:	47
Activity 1.2: Continuation of the Amboró-Madidi Corridor Design	47
Anticipated Outputs/Results for Activity 1.2:	49
Level of Effort for Activity 1.2:	49
Activity 1.3: Continuation of the Biodiversity Monitoring and Evaluation System Design	49
Anticipated Outputs/Results for Activity 1.3:	50
Level of effort for Activity 1.3:	50
<i>Objective II: Effective Management of Existing Protected Areas</i>	<i>50</i>
Activity 2.1: Supporting the Initial Implementation and Effective Management of the Altamachi National Park and Natural Integrated Management Area.	50
Anticipated Outputs/Results for Activity 2.1:	51
Level of Effort for Activity 2.1:	51
OTHER SPECIFIC PROGRAM DETAILS.....	52
Financial Sustainability	52
Travel	52
BERING SEA ECOREGION	53
PROJECT OVERVIEW	53
Description of site	53
Threats.....	53
FY02 accomplishments	55
PROJECT ACTIVITIES	56
<i>Objective I: Protect key sites in the Bering Sea by establishing three new protected areas and enhancing management in two existing areas</i>	<i>56</i>
Activity 1.1: Establishment of a Coastal Protected Area in Karaginsky District	56
Level of effort for Activity 1.1:.....	56
Anticipated Outputs/Results for Activity 1.1:	56
Activity 1.2: Beringia Ethnic Cultural Park and coastal protected areas in Chukotka Region	57
Level of effort for Activity 1.2:.....	57
Anticipated Outputs/Results for Activity 1.2 :	58
Activity 1.3: Development of Kommandorsky Zapovednik.....	58
Level of effort for Activity 1.3:.....	59
Anticipated Outputs/Results for Activity 1.3:	59
<i>Objective II: Shape the development policies for improved stewardship in collaboration with local communities, the private sector and the Russian Government.....</i>	<i>59</i>
Activity 2.1: Creation the network of the “Living Planet” Clubs in Chukota	59
Level of effort for Activity 2.1:.....	61
Anticipated Outputs/Results for Activity 2.1:	61
Activity 2.2: Laying the groundwork for certification/economic incentives for fisheries conservation	61
Level of effort for Activity 2.2:.....	61
(Delayed) Outputs/Results for Activity 2.2.....	61
Activity 2.3 Improving Enforcement in Western Bering Sea through Satellite-based Vessel Monitoring System.....	62
Level of effort for Activity 2.3:.....	63
Anticipated outputs/results for Activity 2.3:	63
OTHER SPECIFIC PROGRAM DETAILS.....	63
Travel	63
FORESTS OF THE LOWER MEKONG.....	65
PROJECT OVERVIEW	65

Table of Contents

Description of Site.....	65
Threats.....	65
FY02 accomplishments	66
PROJECT ACTIVITIES	67
<i>Objective I: Mobilize conservation at the ecoregional scale.....</i>	<i>68</i>
Activity 1.1: Extend Capacity to Mobilize and Manage Large-scale Conservation Across the FLM.....	68
Anticipated Outputs/Results for Activity 1.1:	69
Level of effort for activity 1.1:.....	69
Activity 1.2: Engage Broader Stakeholder Support through Advocacy-based Communications.....	69
Anticipated Outputs/Results for Activity 1.2:	70
Level of effort for activity 1.2:.....	70
<i>Objective II: Promote integrated conservation and development in priority landscapes of the Forests of the Lower Mekong.</i>	<i>70</i>
Activity 2.1: Develop and strengthen the Central Annamites Conservation Initiative, Greater Annamites Ecoregion...	71
Anticipated Outputs/Results for Activity 2.1:	72
Level of effort for activity 2.1:.....	72
Activity 2.2: Develop and strengthen the Conservation Initiative for The Eastern Plains, Dry Forests of Central Indochina Ecoregion.....	72
Anticipated Outputs/Results for Activity 2.2:	74
Level of effort for activity 2.2:.....	75
<i>Objective III: Promote a supportive policy environment for conservation and sustainable natural resource management.....</i>	<i>75</i>
Activity 3.1: Community Management of Natural Resources: The MOSAIC Project.....	75
Anticipated Outputs/Results for Activity 3.1 (Quang Nam):.....	76
Anticipated Outputs/Results for Activity 3.1 (Mondulkiri):.....	77
Level of effort for activity 3.1:.....	78
Activity 3.2: Promote Sustainable Forest Management	78
Anticipated Outputs/Results for Activity 3.2:	79
Level of Effort for Activity 3.2:	80
Activity 3.3: Tackling the fundamental threats to biodiversity and sustainable natural resource management at national and regional levels.....	80
Anticipated Outputs/Results for Activity 3.3:	81
Level of effort for activity 3.3:.....	81
<i>Objective IV: Lay the foundation for lasting conservation.....</i>	<i>81</i>
Level of effort for Objective IV:	81
Activity 4.1: Community Participation for Conservation Success: Promoting community participation towards effective conservation of Vietnam's natural; heritage through community-based Environmental Education	81
Anticipated Outputs/Results for Activity 4.1:	82
Activity 4.2: Building a long-term constituency for Ecoregion Conservation in the FLM	82
Anticipated Outputs/Results for Activity 4.2:	83
Level of effort for the activity 4.2:	83
OTHER SPECIFIC PROGRAM DETAILS.....	84
Monitoring & Evaluation.....	84
Financial Sustainability	84
Environmental Education & Communication.....	85
Travel	85
SULU-SULAWESI MARINE ECOREGION	86
PROJECT OVERVIEW	86
Description of site	86
Threats.....	87
FY 02 Accomplishments	87
PROJECT ACTIVITIES	89
<i>OBJECTIVE I: Effectively conserve critical anchor sites in El Nido, Northern Palawan (Philippines), Bunaken, North Sulawesi (Indonesia), and the Semporna Islands, East Coast of Sabah (Malaysia).....</i>	<i>89</i>
Activity 1.1 Develop an effective El Nido Marine Environmental Protection Program, significantly reducing destructive activities and serving as a model for replication across Northern Palawan.	89
Anticipated Outputs/Results Activity 1.1:.....	90
Level of effort for Activity 1.1:.....	91
Activity 1.2: Develop effective management in Bunaken Park, as measured by the IUCN MPA management effectiveness guidelines, and document successful approaches for replication across North Sulawesi, Indonesia.....	91

Table of Contents

Anticipated Outputs/Results Activity 1.2:.....	92
Level of effort for Activity 1.2:.....	92
Activity 1.3: Semporna Islands gazetted as a marine park and serving as a model of conservation action for the East Coast of Sabah, Malaysia.....	92
Anticipated Outputs/Results Activity 1.3:.....	93
Level of effort for Activity 1.3:.....	93
OBJECTIVE II: Magnification of Conservation Action from Anchor Sites to broader Priority Conservation Areas.....	94
Activity 2.1: Establish a second anchor site in Taytay and develop a cooperative mechanism for a broader marine protection and enforcement program similar to El Nido's marine protection program.	94
Anticipated Outputs/Results Activity 2.1:.....	94
Level of effort for Activity 2.1:.....	95
Activity 2.2: Develop conservation strategy for North Sulawesi, including integration of tourism development plans. Test sustainable financing mechanisms in Bunaken extending across North Sulawesi.	95
Anticipated Outputs/Results Activity 2.2:.....	96
Level of effort for Activity 2.2:.....	96
Activity 2.3. Identify network of critical conservation sites in the East Coast of Sabah and initiate measures to create and support new protected areas.....	96
Anticipated Outputs/Results Activity 2.3:.....	97
Level of effort for Activity 2.3:.....	97
Objective III: Enhancing conservation action and improving fisheries management in Bunaken National Marine Park and the surrounding area.....	98
Activity 3.1: Environmentally sound, science-based management and monitoring of fish stocks and indicator species in Bunaken National Park:.....	98
Anticipated Key Outputs/Results Activity 3.1:	98
Activity 3.2: Expansion of patrolling and enforcement within Bunaken National Marine Park and adjacent areas:.....	98
Anticipated Key Outputs/Results Activity 3.2:	98
Objective IV: Enhancing the sustainability of conservation action by creating and expanding long-term financing mechanisms.....	99
Activity 4.1: Develop sustainable conservation financing mechanisms:.....	99
Anticipated Key Outputs/Results Activity 4.1:	99
Activity 4.2: Institutionalization of effective management of conservation funds:.....	99
Anticipated Key Outputs/Results Activity 4.2:	99
OTHER SPECIFIC PROGRAM DETAILS.....	99
Monitoring and Evaluation:	100
Financial Sustainability	100
Gender Issues.....	100
Environmental Education & Communication.....	100
Travel	101
TERAI ARC LANDSCAPE.....	102
PROJECT OVERVIEW	102
Description of site	102
Threats.....	102
Proposed Response.....	103
FY 02 Accomplishments	106
PROJECT ACTIVITIES	107
<i>Objective I: Coordinate and Facilitate Terai Arc Landscape Management.....</i>	<i>109</i>
<i>Objective II: Achieve Forest Regeneration.....</i>	<i>109</i>
Anticipated Outputs/ Results for Objective II:	109
Level of Effort for Objective II:	109
<i>Objective III: Form and Strengthen Community Forest User Groups</i>	<i>110</i>
Anticipated Outputs/ Results for Objective III:	110
Level of Effort for Objective III:	110
<i>Objective IV: Enhance Sustainable Livelihoods</i>	<i>111</i>
Activity 4.1: Identify and initiate meeting locally defined needs in the Basanta and Katerniaghat corridors	111
Anticipated Outputs/ Results for Activity 4.1:	112
Level of Effort for Activity 4.1:	112
Activity 4.2: Protect crops from wildlife in villages bordering the corridors.....	112
Anticipated Outputs/ Results for Activity 4.2:	112

Table of Contents

Level of Effort for Activity 4.2:	112
<i>Objective V: Support Anti-poaching Activities</i>	112
Activity 5.1: Provide training for Anti-Poaching Unit members	113
Anticipated Outputs for Activity 5.1:	113
Level of Effort for Activity 5.1:	113
Activity 5.2: Design landscape level anti-poaching plan for Nepal side of the Terai	113
Anticipated Outputs for Activity 5.2:	114
Level of Effort for Activity 5.2:	114
<i>Objective VI: Improve Management of Protected Areas</i>	114
Anticipated Outputs for Objective VI:	114
Level of Effort for Objective VI:	114
<i>Objective VII: Set up Education, Communication and Coordination Programs</i>	115
Anticipated Outputs/ Results for Objective VII:	115
Level of Effort for Objective VII:	116
<i>Objective VIII: Establish Research and Monitoring Program</i>	116
Activity 8.1: Obtain GIS Mapping and ground truthing results	116
Anticipated Outputs/ Results for Activity 8.1:	116
Level of Effort for Activity 8.1:	116
Activity 8.2: Collect baseline data to fill information gaps on wildlife in the Terai	117
Anticipated Outputs/ Results for Activity 8.2:	117
Level of Effort for Activity 8.2	117
Activity 8.3: Establish baseline data on socioeconomic conditions in corridor areas	117
Anticipated Outputs/ Results for Activity 8.3:	118
Level of Effort for Activity 8.3:	118
OTHER SPECIFIC PROGRAM DETAILS	118
Monitoring and Evaluation	118
Framework for Determining Success of Program in Pilot Sites	119
Financial Sustainability	120
Travel	120

Project Management

Project Overview

Overall Goal:

To maximize learning and implementation of Ecoregion Conservation efforts in the EcosNature ecoregions, core project management plays an essential role in coordinating communication and facilitation of learning opportunities across ecoregions. Through project management, we have oversight and management responsibility of activities in the leader ecoregions of Atlantic Forests, Bering Sea, Forests of Lower Mekong, Southwest Amazon, Sulu Suluwesi Marine Ecoregion (SSME), and Terai Arc. The following outlines the key accomplishments of last year and plans for the upcoming fiscal year FY01.

FY02 accomplishments

Project Management:

- Productive workshop on “Learning Across Boundaries –Broad-scale Collaboration” held in Coolfont, West Virginia in October, 2001.
- Poster “Measuring Conservation Success” presented jointly with TNC and WCS at the SCB meeting in Canterbury, England.
- GCP partners and other international conservation practitioners met in Canterbury as the first of a series of progressive meetings on how we monitor and measure conservation success. The first follow-up action was completed with a joint effort on defining ecoregional measures in the Bering Sea with TNC, WWF and local experts.
- Results of Economic Support Initiative ‘citizens jury’ activities in the Sulu Sulawesi Seas are generating an enthusiastic response from local villagers, governments and decision-makers as a creative new way of using economic tools to make participatory decisions about natural resources and conservation.
- As a direct result of the *Teaming Drylands* workshop, a learning and exchange program between ecoregion partners in the Fynbos ecoregion and SW Australia ecoregion is underway. WWF is also currently exploring the development of dryland learning networks organized around grazing and fire issues between WWF and TNC. Finally, WWF has also recently signed an MOU with UNDP, through which we will explore a collaborative learning portfolio of dryland ecoregions.

For EAI:

- Administrative agreement authorizing the transfer of \$US 17.5 million from the EAI account under FONAMA to Fundación PUMA was signed by PUMA and the Government of Bolivia in July 2002. In addition, Bolivia's Treasury made the final deposit of local currency payment equivalent to \$US 1 million to EAI's account, thus completing the \$US 20 million in promissory payments.

Project Activities

The core management team will provide the necessary programmatic, financial and administrative oversight to support site-based implementation and facilitate learning among ECOSNature ecoregions and throughout the broader network of WWF and GCP partners. An important function for this team is facilitating opportunities to broaden learning and testing of different methods through various mechanisms such as thematic and/or geographic workshops, ecoregional exchange visits, creative communication media and innovative grants. These mechanisms help to advance the concept of ecoregion conservation within ECOSNature ecoregions and across ecoregions that are global priorities as identified in the original proposal. Just as importantly, the coordination of these activities includes exploring ways to create more exchange and collaboration with the broader conservation community, many of which are rolling out large-scale conservation in different ways around the world. The following reflects our intention of testing out creative ways to fulfill this dual role of supporting WWF programs to achieve our global goals as well as acting as a catalyst for conservation beyond our institutional boundaries.

Total level of Effort: \$ 914,000 (\$ 300,000 USAID; \$ 614,000 WWF)

Objective I: Mobilize Conservation Action on an Ecoregional Scale

Activity 1.1 Maintain EcosNature coordination team

The coming year will provide the opportunity to further track progress, facilitate communication and coordinate reporting for a coherent program designed to test and support this approach in the focal ecoregions of the EcosNature Project. As associates emerge, this coordination team keeps track of existing and/or promotes potential opportunities for support through other AID missions to help foster greater learning and capturing of experience that can be exchanged across ecoregions. With the broadened collaboration between GCP partners, the ECOSNature team will help facilitate opportunities for exchange and in particular participate actively in the design process and response to GCP II.

Anticipated Outputs/Results:

- Effective programmatic and financial administration to advance conservation impact in EcosNature ecoregions.

Level of effort for the activity:

\$178,000 (78,000 USAID; \$100,000 WWF)

Activity 1.2 Facilitate activities and communication as opportunities for exchange and learning to advance Ecoregion Conservation implementation**Workshops****Learning Across Boundaries III -- Metrics and Measures of Conservation Success**

Level of Effort: \$ 25,000 (\$20,000 USAID; \$5,000 WWF)

The focus of this year's annual workshop, to be guided by WCS in partnership with WWF, emerged from ongoing conversations and collaboration with GCP partners to address one of the more challenging issues on the horizon; monitoring and measuring conservation success at broad scales. Progressive meetings from the past year have helped to define the agenda and direction for this workshop and promises to be a useful forum for sharing tools/approaches. In particular this meeting will propose agreement on shared standards and process as well as exchange ideas on auditing systems that can be used as peer review 'certification' of conservation programs. We will also identify ways of communicating results and lessons learned (e.g. such as potentially for presentation or discussion in the 'Measuring Effectiveness' session at the Vth World Parks Congress in Durban, South Africa in 2003).

Private Lands Conservation Level of Effort \$25,000 (\$20,000 USAID; \$5,000 WWF)

An emerging trend within WWF's ecoregion programs and across other programs working at multiple use large-scale conservation is the need to develop specific conservation strategies related to private lands. As such, we will bring together a small number of ecoregions who have identified issues related to private lands as either major threats or emerging opportunities. For example, an exchange between Valdivia and High Plains yielded a private lands study that is now the blueprint for action for both TNC and WWF in the Valdivian. This peer exchange workshop will build on this using a combination of collaborative learning techniques, a capacity strengthening event will pull together WWF with key GCP and other partners from Valdivia, High Plains, Fynbos, Atlantic Forest, Miombo, and Mekong ecoregions to share ideas and review existing programs. Representatives from NGOs working in land tenure issues, experts looking into specific tools and approaches along with representatives from key stakeholder groups such as land owners who can speak from their experience will all be invited to share current issues and possibilities.

Communications

Level of Effort \$65,000 (\$10,000 USAID; \$55,000 WWF)

In the first phase of work with knowledge management consultants (Origo Inc.) that conducted an assessment of user's needs, three tools were identified as the most useful to meet field needs and in particular, address one of the greatest challenges of accessing timely information. These tools are a resource directory of practitioners, a document repository and a help desk feature. In

reviewing options for broad electronic communication, work continues to adapt current use and design new options for intra/inter/extranets. Documents are now being placed on WWF International's Intranet. We are also working with other conservation organizations, specifically TNC, to build and link with existing systems such as ConserveOnline as a mechanism within BCIS – the broader biodiversity commons. Data and documents will continue to be uploaded with a link established to this learning portal through ConserveOnline in the next fiscal year. WWF will also continue to produce several publications that synthesize results on specific issues as well as communicate learning over the past year. In addition to those already mentioned within the Innovative Grants section, some highlights of other products include “An Assessment of the Freshwater Ecoregions of Africa”¹, “Marine Ecoregion Conservation – A Resource Book” as well as multiple issues of ‘Sharing Across Boundaries’ (SABs). SABs communicate lessons learned and case studies on current issues being faced by large-scale conservation practitioners within WWF as well as the broader conservation community. For this next year we will cover topics such as ‘What’s in an Ecoregion Action Plan?’, “Measuring Conservation Success” and others. These will all be shared broadly with GCP partners and the conservation community.

Ecoregional Exchanges

Level of Effort \$10,000 (\$5,000 USAID; \$5,000 WWF)

In the Atlantic Forests ecoregion, a clear need has been to strengthen the capacity of ecoregion team members and partners in using GIS as a tool for better analyzing and communicating results to reach critical decision-making audiences. The Southwest Amazon team has a well-developed capacity for using GIS and support will be provided for the Atlantic Forest team to join the SWA team in an ecoregion exchange. Using the opportunity of this visit, WWF SWA staff in Peru will host a meeting with other conservation partners in the area (e.g. CI, TNC and local partners) to share lessons learned as well. Other ecoregion exchanges are being considered but not yet confirmed.

Anticipated Outputs/Results:

- Proceedings of LAB III (see also Measures in Activity 1.3)
- Proceedings of Private Lands Conservation workshop
- Published documents, “An Assessment of Freshwater Ecoregions of Africa” and “Marine Ecoregion Conservation – A Resource Book”
- Three Sharing Across Boundaries on issues relevant to WWF ecoregion programs and GCP partners.
- Broader capacity and knowledge of GIS-based tools and maps and their use in conservation action plans.

Level of effort for the activity:

\$ 140,000 (\$ 70,000 USAID; \$ 70,000 WWF)

¹ World Wildlife Fund assembled a team of leading scientists to conduct this assessment of freshwater ecoregions in Africa. Results focus on identifying globally outstanding ecoregions, types and immediacy of threats, gaps in information and proposes a broad-scale framework with viewpoints from leading scientists in eleven essays.

Activity 1.3 Facilitate Innovative Grants

The purpose of innovation learning grants is to promote creative and rigorous thinking and acting to advance the concept and practice of ecoregion conservation and other large-scale conservation practices. Using the criteria established, several grants are being considered for FY03.

Global Trends –Agribusiness – Minimizing threat and maximizing opportunity through best management practices

Level of Effort \$332,000 (\$32,000 USAID; \$300,000)

WWF believes that in order to address agriculture as a threat to biodiversity, we must understand what commodities and practices can be influenced by a variety of tools at multiple scales. One of the most promising is the leveraging of better practices that make for better business and lower impact on biodiversity. In the upcoming year, activities are focused on high level meetings with the insurers, investors and buyers of agricultural and aquacultural commodities as well as direct work with farmers, governments and NGOs. For high level impact, WWF is partnering with the IFC to develop BMP-based investment screens that support more sustainable business that reduces impacts on biodiversity. In addition WWF and FAO are developing a partnership that will focus on 6-8 different commodities (both food and cash crops) in 6-8 globally significant ecoregions. FAO will work with WWF staff to finalize the regions and commodities in November 2002.

On the ground, initial assessments of major agriculture issues affecting biodiversity in the Lower Mekong and the Atlantic Forests were completed. The preliminary results and follow-up actions for the coming year are as follows:

Forests of Lower Mekong

In Vietnam, there are several commodities that have disrupted major markets in the past 10 years (black pepper, cinnamon, cashew, and most recently shrimp, coffee, sugar and cotton). Each of these could be produced with fewer impacts on biodiversity but to date no producer codes or BMPs have been identified. There are also multiple organizations of producers that have not been mobilized but could be, in order to promote greater production efficiency/reduced impact. While there are extensive regulations on agricultural impacts, there is very little enforcement, lack of transparency and corruption. For example, one of the most important drivers for agricultural expansion is a system of land concessions and leases granted mostly to military officials who in turn bring in farmers to produce specific crops (such as sugar and coffee). The officials with concessions have contracts to supply products to larger buyers and they receive a direct payment from buyers based on total production that is generated. Follow-up recommendations from the scoping report range from mechanisms to leverage BMPs as well as identifying core policies that can reduce agricultural impacts, working with the government to strengthen capacity and develop cost effective ways for enforcement.

The main issue in Cambodia is granting of agricultural concessions in the national forests. While these are intended to increase agricultural production and employment, they in fact are used to increase logging operations. An important follow-up action is to help expose and eliminate this form of logging. Another form of concession in Cambodia is for plantation pulp, and the Chinese

have agreed to develop a pulp plant. An immediate follow-up action is to generate a quick calculation that indicates the total area that would need to be plantation trees to feed the mill. This data combined with knowledge of biodiversity in the landscape can be used to identify threatened areas and those forests needing protection for their biodiversity value or because they are not appropriate for planting (e.g. slope, riparian, etc.).

In Laos, the main threats are two-fold. First, the government is proposing the development of hydroelectricity. An anticipated impact is that agriculture will expand, initiated by the need to feed those working on the projects. More significantly however, Laos has much more land than neighboring countries. Currently the centralized government simply does not have a policy structure that would allow it to shape proactively the development of agriculture. The primary action at this time is to work with the government to craft policy options to strategically encourage a more rational development that incorporates biodiversity values.

With these results from Vietnam, Cambodia and Laos, the immediate follow-up actions will be to develop a process where WWF staff can work with partners to develop strategic priorities from amongst the recommendations that maximizes opportunities for leveraging influence on the shape and direction of agricultural impacts.

Atlantic Forests

The scoping suggests that agricultural expansion in Paraguay is proceeding at more than 8 percent per year. While each farmer is required to maintain natural habitat on their farms, this often doesn't happen. There is no plan in place to ensure that patches on one farm connect with those on its neighbors and create appropriate wildlife corridors. Agricultural cooperatives recently asked WWF to help them undertake this kind of planning as well as to consider the issue of tradable habitat—the idea here being that 100 percent of some farms is ideal for soy production whereas some other properties have a far lower percentage of land that is suitable for sustained production. The goal of the producers is to be able to trade development rights so that the total uncleared land would include the right amount, but that it could be used in such a way as to protect areas that are more fragile and biodiverse.

Government, too, seems willing to work with WWF to develop large-scale zoning of areas that have not yet been exploited. While it will be easy to identify steep slopes and riparian areas, and perhaps even inappropriate soils, it is doubtful that there is sufficient information at this time on those high conservation value areas that should be zoned out of use. Follow-up actions include WWF working with the government and other stakeholders plan for zoning in the absence of such data until it can be collected.

Further work is also being explored in both Brazil and Paraguay on rehabilitation of degraded lands, land value and subsidies. All of which can heavily influence how and where agriculture develops and the subsequent impacts on biodiversity.

Economic Incentives

Level of Effort: \$59,000 (\$35,000 USAID; \$24,000) WWF

Efforts of the Economics Support Initiative in the past year focused on building capacities of communities and conservation practitioners to use economic tools and analysis in support of

conservation objectives. In the Mekong, USAID supported studies focused on understanding ecological and societal values of floods. This work will be used to influence development plans and discussions of the Mekong River Commission and will be presented at the Second International Symposium on the Management of Large Rivers for Fisheries to be held in Cambodia in February 2003. In Sulu Sulawesi Seas, citizen's juries, were used to give citizens and stakeholders around Bunaken National Park in the Sulu-Sulawesi ecoregion a new voice for conservation. In partnership with the University of Queensland, A Community Jury Workshop brought together representatives from the national park, mangrove users, fisherman, scientists, and dive operators to debate, discuss and make recommendations on more effective management of the park. Compiling biologic and socioeconomic information, experts were asked to 'testify' on conservation issues relative to the areas. A jury of 25 community leaders and government representatives ruled on decisions related to more effective management of the park, and has put forth specific recommendations that they will take to government departments and resource management agencies. Local newspaper articles and community discussions have stimulated interest in this transparent and participatory approach to decision-making in Indonesia, with communities already establishing citizen's juries to address garbage and pollution issues in North Sulawesi and other issues in the Tondano watershed.

In Papua New Guinea, WWF is collaborating with TNC and the University of PNG to build local capacities to undertake various economic analysis to better understand the potential impacts of oil palm development on biodiversity and community livelihoods. The study will be expanded to incorporate biological aspects in partnership with the Smithsonian Institution in an effort to provide new and more comprehensive information to communities, provincial and national authorities, and international investors in order to make more informed decisions about prospective oil palm development. As well, we expect to expand this work into Papua in the coming year to provide a more comprehensive overview of the ecoregion. This USAID supported work complements similar economic capacity building initiatives in Latin America. For example, in the coming year we will support building the capacities of local partners in Bolivia to use economic tools in the Pantanal addressing grazing issues. With the early results from across the different pilot studies, ESI will produce a publication of lessons learned to date from these economic capacity-building initiatives. Each of these pilots, especially PNG and Pantanal, work is and will continue to be coordinated with GCP partners as is needed for maximizing impact.

Measures & Monitoring

Level of Effort \$50,000 (\$35,000 USAID, \$15,000 WWF \$200,000 *unconfirmed*)

WWF is putting dedicated time and effort in the coming year to explore how we monitor and measure conservation impact. Embedded within a larger framework that is looking at a comprehensive set of parameters (from biotic impacts, threats, enabling conditions, to institutional effectiveness), efforts will focus on helping ecoregion action programs define and refine measures (from ecoregion to landscape) with partners to develop appropriate monitoring plans. Leading from the joint effort with TNC in the Bering Sea that happened in September, we will engage with up to an additional six ecoregions in the coming year. We will build on the lessons learned from TNC's model of promoting ecoregional measures standards, to design a process to work with ecoregion teams/partners in defining measures within a variety of scales and contexts and share these lessons more broadly.

One key mechanism for sharing ideas and practices will be as part of the progressive dialogues WWF is helping to spur amongst the GCP partners. The joint meeting in Canterbury in July brought practitioners together, generated specific collaborations and led to a collective agenda for the next meeting in November. At this next meeting, representatives from GCP will 1) share what they are doing for 1st party 'auditing' and how they monitor/measure success 2) define common standards and processes that can provide the criteria for 2nd party auditing/certification of conservation programs, 3) outline ideas for promoting 2nd party certification based on these standards/processes. It is anticipated that this momentum will carry forward areas of specific collaboration with GCP/other partners where we are working in the same places as well as catalyze conservation-wide shifts in how we measure conservation success.

Conservation Planning

Level of Effort \$15,000 (\$15,000 USAID; \$0 WWF)

Following on the model developed by multiple partners working on conservation finance issues "A Training Guide to Conservation Finance", TNC is spearheading an effort to produce a similar multi-logo CD-ROM that would bring together in one place the various broad-scale/ecoregional conservation planning tools. This will include an analytical piece that distinguishes between the tools and approaches and attempts to bring out any universal common ground as well as existing and potential pitfalls across the conservation community. This multi-branded product will be presented at the WPCA to bring a much-needed synthesis on broad-scale approaches as well as catalyze dialogue and debate on the merits and gaps.

Governance

Level of Effort: \$30,000 (\$30,000 USAID, \$0 WWF \$330,000 *to be confirmed*)

Governance issues consistently rise to the top as one of the critical factors for determining long term success. WWF is exploring the role of governance at multiple scales; from transboundary agreements; national protocols, regional/local. Through the lens of supporting 'good governance', WWF is interested in what structures and processes support sound decision-making over land and resources. One tool that will be explored in the coming year is the use of Decision Support Systems (DSS). DSS is an emerging innovation that brings together academic research on how decisions are made using specific technologies that can be useful to the conservation practitioner. DSS most often uses software programs that integrate biological and socioeconomic information into a process of decision-making in conservation and natural resource management. Various softwares have been developed within a range of contexts (e.g. C-Plan used in the CAPE Fynbos ecoregion project). Pending approval of funding from NSF, WWF will build on a review of 12+ DSS software packages to test out various DSS tools at a range of scales in 4 ecoregions (Miombo Woodlands of southern Africa, High Plains in the western U.S., Atlantic Forests and Southwest Amazon).

For Southwest Amazon in particular, USAID funds will support the WWF Bolivia team in working with a pilot 'mancomunidad' in the Amboro-Madidi corridor. Guidance from a team of regional planners and technicians will support WWF Bolivia staff and partners in articulating a process that uses the most appropriate DSS tool. One of the key goals, is to explore how DSS

can support and catalyze a participatory decision-making process and product that integrates biodiversity information/values into the regional planning context.

Population/Gender and Environment

Level of Effort: \$105,000 (\$5,000 USAID; \$100,000 WWF)

Results from the initial pilots of supporting girls scholarships as a strategy for addressing population dynamics within critical biodiversity conservation area has proven to be a promising avenue to pursue. USAID funds for supporting scholarships in Sulu Sulawesi Seas have leveraged matching funds as part of a larger challenge grant for the coming year. In addition to the 4 ecoregions where WWF supports scholarships (E. Himalayas/Terai Arc, Sulu Sulawesi Seas, Madagascar, East Africa Marine), scholarships are targeted for expansion into another 10 ecoregions in the next 5 years. This program is accompanied by a developing analytical and monitoring plan to attempt to gauge how effective this strategy is at tackling population and gender issues within biodiversity conservation. USAID funds will be used to support this crosscutting analysis as part of an overall package of understanding the relationships between women and conservation.

In the Lower Mekong, USAID supported population and consumption overlays work is being undertaken in collaboration with the Mekong River Commission (MRC) data collection process. The data that is collected will be translated into maps that will be published by MRC in a "Social Atlas of the Lower Mekong" - a document intended to influence future land-use planning and policy making across the region. These overlays will contribute to (a) data analysis and spatial mapping of forces influencing the state of biodiversity; (b) collaboration and dialogue between WWF and MRC; and (c) future planning and policy decisions for the Mekong.

Results from the population overlays used in Fynbos ecoregion are also directly informing regional planning agencies. The CAPE program is also using the maps to pursue further analysis of key findings (e.g. the link between grain farming distribution and subsidies; bimodal distribution of vineyards, etc.) to strengthen lobbying efforts with government and key sectors in land use planning. This additional analysis - backed up by the overlays (maps and analysis) will provide the CAPE project with (a) a powerful resource for lobbying of politicians and decision-makers to find sustainable solutions and (b) public education tool that makes the links between population, agriculture and the environment. These maps will be used further to calculate the 'footprint' of the average Cape/Fynbos citizen on CAPE biodiversity.

If funding permits, a '3rd generation' of overlays would focus even more on the potential of the overlays to build on WWF's Living Planet Index and subsequent WSSD discussions and push the development of more sophisticated 'footprint' modeling. Additionally, the population/environment program will pursue further analytical and crosscutting work on migration, identifying successful approaches to tackling migrations which threaten areas of high biodiversity value. This will entail working directly with specific ecoregions where migration is the key population dynamic, and collaborating with other organizations working in the field of migration.

Addressing population/environment issues more broadly, CSU commissioned an analytical review of WWF investments in population and gender that highlight lessons learned, outstanding

issues and provide recommendations for further investment. WWF also hosted a forum with population and environment practitioners that included GCP partners and will explore proposed follow-up actions as funding and opportunities permit. For gender issues in particular, CSU continues to support - with plans to expand - the girls scholarships program, the Women and Conservation Recognition Awards and small grants that target innovative opportunities. (e.g. community-based toxics monitoring with native women in the Bering Sea).

Anticipated Outputs/Results:

- BMP Investment screens drafted and endorsed by critical decision-makers for key commodities.
- Action plans for mitigation of agricultural impacts for Forests of Lower Mekong and Atlantic Forests defined with first steps taken.
- ESI case studies published and disseminated to WWF Network and partners.
- Certification/auditing process piloted across GCP partners in representative sites.
- Population overlay for Lower Mekong completed.
- Analytical monitoring plan for girls scholarships in place.
- CD-ROM to support TNC-lead synthesis and analysis of ecoregional/broad-scale conservation planning tools presented at WPCA, 2003.

Level of effort for the activity:

\$ 596,000 (\$152,000 USAID; \$444,000 WWF)

Activity 1.4 WWF Bolivia establishment and management of the Enterprises for the Americas (EAI) Foundation

Note: There are no further funds for this activity to support Fundación PUMA during FY03. The costs incurred will need to be covered by USAID or other funding sources.

This activity seeks to strengthen the level and quality of conservation funding in Bolivia which includes six Global 200 ecoregions: Southwest Amazon, Pantanal, Andean Yungas, Chiquitano Dry Forest, Cerrado Woodlands, and Central Andean Puna. WWF is working with P.U.M.A. (Fundacion de Proteccion y Uso Sostenible del Medio Ambiente) to establish the EAI. The primary goal is to achieve high standards of transparency, efficiency and accountability in the establishment and management of foundation funds. In the past year, the following accomplishments were achieved:

- I. The administrative agreement authorizing the transfer of \$US 17.5 million from the EAI account under FONAMA to Fundación PUMA is signed by PUMA and the Government of Bolivia. (July 2002)
- II. Bolivia's Treasury makes final deposit of local currency payment equivalent to \$US 1 million to EAI's account (January 2002), thus completing the \$US 20 million in promissory payments.
- III. General manager for Fundación PUMA is hired, Antonio Delius Perez (July 2002)
- IV. Decreto Supremo signed authorizing immediate transfer of EAI operational accounts from FONAMA to Fundación PUMA (December 2001).

Several steps still remain to finalize the transfer of the Bolivia EAI Account's investment account in Citibank of New York (totaling approximately \$17.5 million) from FONAMA to Fundacion PUMA. However, these are relatively minor procedures which should be completed within the next few weeks, including:

- Transfer of investment account signatures,
- Inscription of the \$17.5-million EAI budget in the GOB national budget,
- Completion C-31 treasury transfer forms, and
- Actual transfer of the EAI funds from GOB's public account to Fundacion PUMA's private account in Citibank.

Some of the next hurdles for the board include:

- Launching a call for environmental project proposals asap,
- Changing the administrative costs arrangement through an exchange of diplomatic notes,
- Developing investment policy and planning,
- Consolidating the organization (structure, staff, strategic planning, etc.)
- Improving project administration and management.

Level of effort for the activity:

\$0

Note: There are no further funds for this activity to support Fundación PUMA during FY03. The costs incurred will need to be covered by additional USAID or other funding sources.

Other Specific Program Details

Travel

WHO	FROM	DESTINATION	# OF TRIPS	PURPOSE
WWF Staff	Washington D.C.	Bering Sea	1	Measures
WWF Staff	Washington D.C.	Lower Mekong	3	Field Visit, Measures and Agriculture; Population
WWF Staff	Washington, D.C.	Southwest Amazon	1	DSS, Measures and Agriculture
WWF Staff	Washington, D.C.	Atlantic Forest	3	DSS, Measures and Agriculture

WWF Staff	Washington, D.C.	South Africa	3	WPCS
WWF Staff	Washington, D.C.	Miombo	1	Population
WWF Staff	Washington, D.C.	East Africa Marine	1	Population
Atlantic Forest WWF team	Atlantic Forest	Peru	3	Freshwater Workshop
WWF Staff	Washington, D.C.	Northern Andes	1	Population
WWF Staff	Washington, D.C.	Sulu Suluwesi Marine ecoregion	2	ESI and Agriculture
WWF Staff	Washington, D.C.	Congo Basin	1	Population
WWF Staff	Washington, D.C.	Papua New Guinea	1	ESI
WWF Staff	Washington, D.C.	Bismarck/Solomon Islands	1	Population
WWF partner	Washington, D.C.	Chile	4	Private lands peer exchange
WWF Staff	Washington, D.C.	Chile	2	Private lands peer exchange

Atlantic Forest Ecoregion

Project Overview

Description of site

The Atlantic Forest Ecoregion Complex, which includes 15 ecoregions along the coast of Brazil and extending into Misiones Province of Argentina and eastern Paraguay, is one of the most endangered rain forests in the world. Once covering approximately 1.7 million km² in Brazil, Paraguay and Argentina, only 7.4% of it now remains, and it is scattered in fragments. The Atlantic Forest is also one of the most diverse rain forests in the world. One hectare in the Brazilian State of Bahia was found to contain 450 different species of trees. More than 52 percent of the tree species and 92 percent of the amphibians in the Atlantic Forest are found nowhere else in the world. And because the vast majority of the Atlantic Forest has disappeared, many of these species – including 22 primate species and at least 158 species of birds – are highly endangered.

The largest ecoregion of the Atlantic Forest Ecoregion Complex is the Interior Atlantic Forest. Today, only about 7.2% (44,169km²) of the original forest cover (614,580km²) of the Interior Atlantic Forest Ecoregion remains. Deforestation of this region has been most severe in Brazil where as little as 3.7% (17,298 km²) of the original area of that forest type remains, virtually none existing outside protected areas. About 14,678km² (49.5% of the original area) remain in Argentina, forming a contiguous corridor covering a large part of the province of Misiones. Although Paraguay retains a large area (14,789km²) of Interior Atlantic Forest, it is only 13.4% of the original area of Atlantic Forest in that country. Deforestation in Paraguay in recent years (the highest rate of any country in Latin America) has fragmented the remaining forest. Conservation of the Atlantic Forest in this tri-national region is also important for the conservation of the biodiversity of the Upper Paraná River ecoregion. With a remarkably diverse fauna, including over 300 species of fish and other aquatic organisms, both vertebrates and invertebrates, this ecoregion has a high degree of species endemism. The tri-national forest corridor, centered in the Argentine province of Misiones and eastern Paraguay, includes Iguazu National Park and smaller forest fragments in Brazil. This is the largest remaining area of the Paraná/Paraíba Interior Atlantic Forest Ecoregion and is the last refuge of the jaguar in the Atlantic Forest Ecoregion Complex.

In Brazil, the Atlantic Forest was the first area to be colonized and has developed into the agricultural, industrial and population center of the country. The original Atlantic Forest cover has been reduced by centuries of unsustainable use into small forest islands surrounded by agricultural and urban development. In addition to containing “genetic banks” of some of the world’s rarest species, what remains of the Atlantic Forest is directly associated with the quality of life of 70% of the Brazilian human population who live in the ecoregion within 100 km of the coast. The remaining Atlantic Forest fragments are vital to watershed protection, prevention of soil erosion and siltation, and in maintaining microclimates and other environmental conditions necessary for the very existence of Brazil’s most populated cities and rural zones. In contrast,

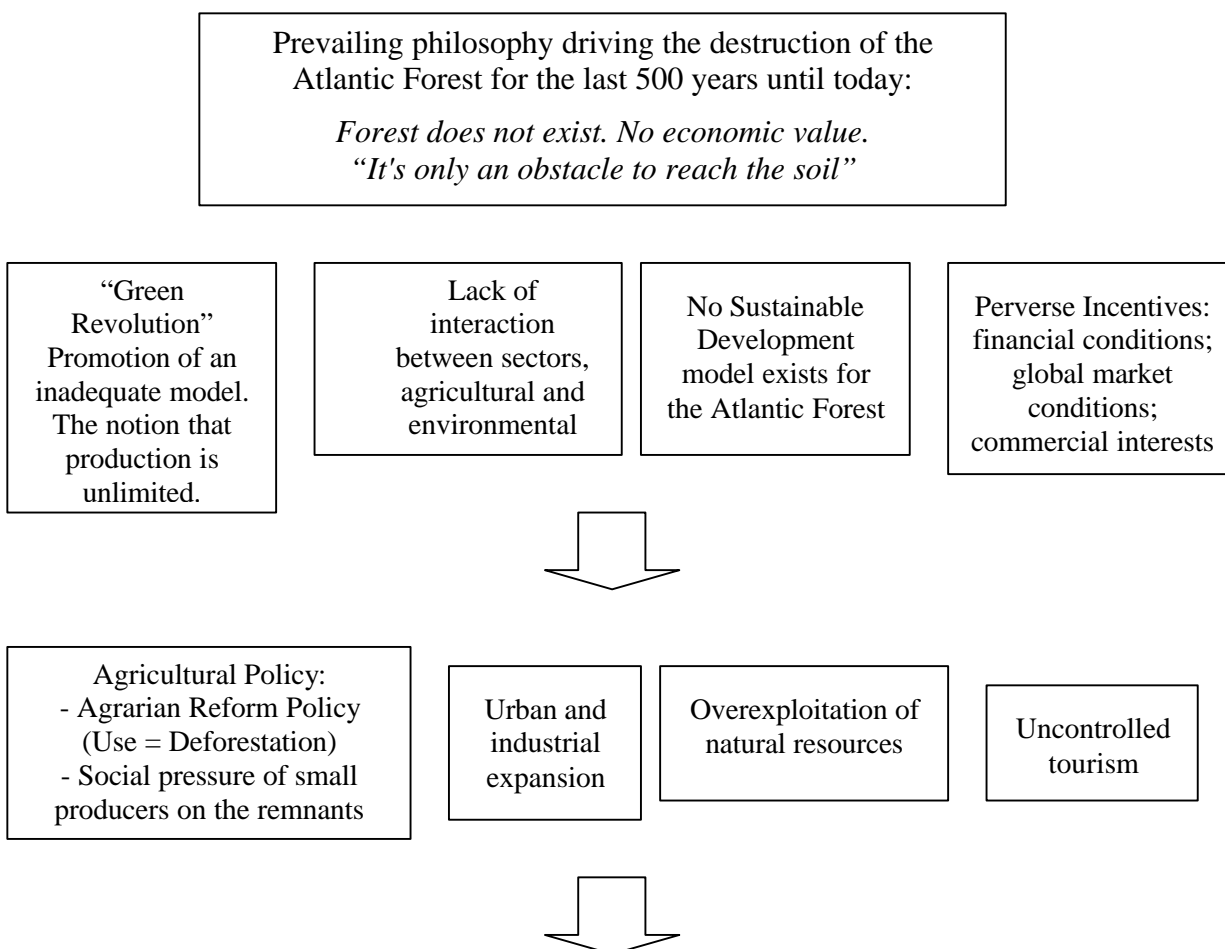
the isolation of the Atlantic Forest from human population centers in Argentina and until recently in Paraguay, has allowed the preservation of one of the largest forest corridors. Only about 3% of the entire Atlantic Forest is now in protected areas. Many of these areas are not effectively protected, and their land tenure is unresolved. Existing protected areas are threatened in all three countries by the establishment of land reform settlements, within their boundaries or in adjacent areas, using ecologically and economically unsustainable land-use practices. Brush and forest fires, road construction, cutting of timber and firewood, agricultural expansion, uncontrolled tourism and urban sprawl are all-important threats to the Atlantic Forest. In addition to deforestation, dams threaten the biodiversity of the Upper Paraná River ecoregion.

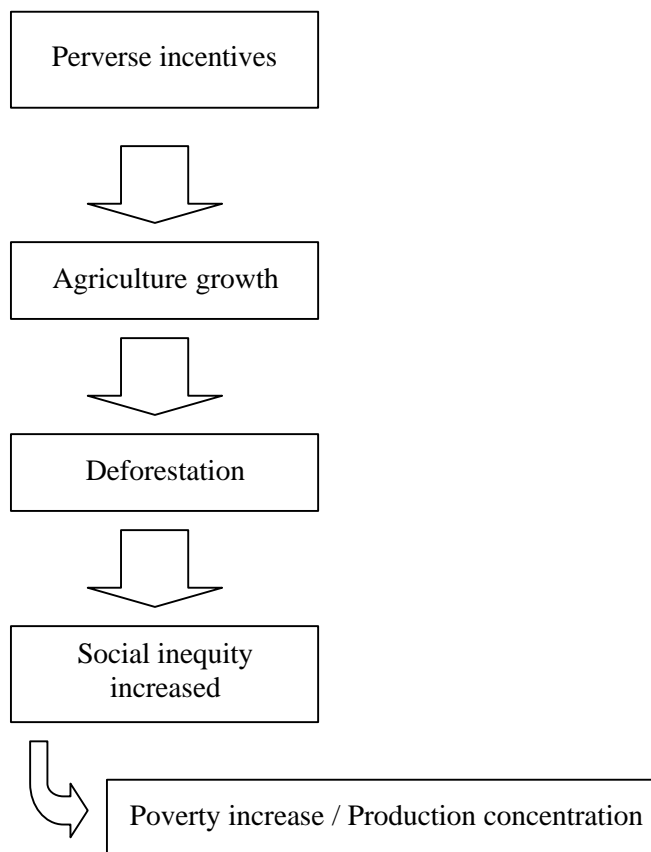
Threats

Conservation Problem: Reduction and fragmentation of the forest cover – 7% of the original forest cover remains

Effect on biodiversity: Risk of total collapse of ecological processes
 Low resilience against long-term change
 Remaining forest fragments may not represent species diversity

Historical and Current Causes of Atlantic Forest Conservation Problems





Current Causes

- Lack of land use planning
- Fragile government institutions
- Inefficient licensing
- Inefficient instruments and control systems
- Corruption
- Human migrations (to both urban areas and to rural areas)
- Urban expansion of coastal zone of Brazil and other ecoregional areas
- Population growth
- Developing infrastructure (roads, oil pipelines, dams)

All the above causes lead to:

- Much of the remaining Atlantic Forest is below the limit for resiliency.
- Vital Resources (water, soil) threatened.

FY02 accomplishments

- On October 11, 2002 the President of Paraguay officially recognized the first two private reserves in the country. Both areas are core-forested areas, which our Biodiversity Vision for the Upper Paraná Atlantic Forest prioritizes for strict protection. The 5,700-hectare Arroyo Blanco Private Reserve located adjacent to the Cerro Cora National Park is one of the best protected privately owned forest reserves in Paraguay and can serve as a model for other private reserves in the Atlantic Forest. The 50,000-hectare Estancia la Golondrina (also called Morombi) property located near the Mbaracayu Biosphere Reserve contains approximately 20,000 hectares of forest protected as the Private Reserve. This official recognition exempts the landowners from property tax in exchange for their demarcation of the reserves and commitment to implement a management plan. This official recognition is the result of 7 years of efforts by partner Moises Bertoni Foundation private reserves program. We hope that this recognition and tax exemption will encourage more Paraguayan private landowners to permanently protect their Atlantic Forest fragments.
- Paraguay's President signed a decree on October 9, 2001, changing the status of the 34,535-hectare Yvyturusu National Park to Yvyturusu Managed Resource Reserve Area. Since its declaration in 1990 the Yvyturusu National Park has been a paper park that exists in name only. The area had never been demarcated, the land was totally privately owned with many families living there, and there was no government administration for the park. The landowners have resisted forest conservation efforts in the park because they were concerned they would lose their land. With WWF support, the NGO Alter Vida completed demarcation of the park and recommended the change in status. With this new status the land will remain in private hands, and Alter Vida is working with the owners and the Secretary of the Environment of Paraguay to develop a management plan through a conflict resolution process. Many of the owners are now enthusiastically moving to protect their forest in private reserves or conservation easements. This is real progress in moving from protection on paper only to real protection of one of the priority core areas of remaining Atlantic Forest fragments in Paraguay.
- With the Presidential Decree number 16610 of March 7, 2002, San Rafael National Park changed its protection status to Resource Management Area. San Rafael had never functioned as a park because the government never had funds to acquire the land, which is entirely under private ownership. This new status, which allows the land to remain in private ownership but requires zoning, has stimulated many new government and non-government initiatives for improving protection of this top priority core area of forest. These initiatives include conservation easements, fundraising for land acquisition for strict protection, and sustainable use programs. The Secretariat for the Environment with funding from the Global Environmental Fund (GEF) is also developing an important program for the conservation and sustainable development of San Rafael. ProCosara, the local NGO of landowners in San Rafael, continues development of a law enforcement program to stop illegal hunting and logging.

- WWF and partner actions resulted in important progress for protection of the Mbaracayú Core Forest Area. The Paraguayan government is in the process of signing a 150-year concession to the Ache Indigenous Group for conservation and sustainable use of a 4,629-hectare area bordering the Mbaracayú Reserve core area in the Mbaracayú Biosphere. The Ache, who maintain a traditional culture based on the forest, will assist in protecting the Reserve from logging and will maintain the forest on their land. WWF and the Moises Bertoni Foundation have developed activities to help the Ache establish themselves on the land and develop a management plan. WWF and FMB are also providing training in protected area management to six Ache leaders. It is hoped that the Ache can maintain their area as a buffer zone between the Mbaracayú Reserve and surrounding agricultural lands.
- Important progress is being made toward the establishment of the Rio Paraná Corridor along the border of Brazil and Paraguay. Atlantic Forest Coordinator Lucy Aquino and Paraguayan staff of ITAIPU-Binacional, (the huge hydroelectric dam on the border between Paraguay and Brazil) established a working group to develop a proposal to Man and the Biosphere (MaB) to establish the ITAIPU reserves as a Biosphere Reserve. Lucy Aquino has met with 50 town mayors to coordinate conservation actions in the Municipalities of the Departments Alto Paraná and Canindeyu.
- The Nature Conservancy (TNC) and WWF signed a Memorandum of Understanding committing to collaborate on several actions prioritized in the Biodiversity Vision for the protection of Core Areas of the Upper Paraná Atlantic Forest of Paraguay. These actions include: institutional development, multi-stakeholder collaboration, long-term financial planning, land acquisition and site conservation. This collaboration will help leverage more support, more funding and public awareness for the Upper Paraná Atlantic Forest Ecoregion in Paraguay.
- WWF obtained legal status in Paraguay in March 2002.
- On August 12, 2002 the government of Paraguay, by Presidential Decree number 18219 created the Capiibary Ecological Reserve, to protect a 5,000-hectare forest remnant located in the southwest corner of the Mbaracayu priority area. Demarcation and a rapid ecological assessment are the next steps to effectively protect this very important forestland.

Project Activities

The Biodiversity Vision for the Upper Paraná Atlantic Forest Ecoregion (see Annex), developed as a part of this project, is the main tool to focus and prioritize lines of action for the conservation of biodiversity of this ecoregion. Although we will continue to refine the Vision as we gain more information and experience, the Vision is sufficiently developed now to allow us to reorganize our action plan to achieve four main targets:

- I. General Target: **coordination of efforts** among the WWF Atlantic Forest team working in Brazil, Argentina, and Paraguay and with partner institutions;
- II. **Effective protection of core areas of forest;**

- III. **Conservation and restoration of a network of biological corridors** connecting the core areas; and
- IV. **Implementation of sustainable use areas**, surrounding the network of core areas and biological corridors.

WWF will continue to maintain coordination staff and programs at the Atlantic Forest ecoregion scale and in Brazil and Argentina, but these will not be implemented as part of WWF's match. These activities are mentioned in this implementation plan only inasmuch as they are directly relevant to this Atlantic Forest project Paraguay and are not included in the calculation of level of effort in this plan.

Total level of effort \$200,000 (USAID)

Objective I: Mobilize and coordinate conservation action at an ecoregional scale

Level of effort for Objective I: \$103,069 (USAID)

Activity 1.1: Mobilize and coordinate action in Paraguay for the conservation of the Upper Paraná Atlantic Forest at an ecoregional scale.

WWF obtained official legal status in Paraguay in March 2002. Aida Luz Aquino (Lucy), who has been working for WWF as a consultant to coordinate the WWF Atlantic Forest program in Paraguay since March 2000, is now the legal representative of WWF in Paraguay. As of October 1, 2002, she will become a WWF "local hire" based in a small WWF project office in Asuncion. The level of effort for this activity includes provision of salary, a part-time technical assistant and secretary, travel expenses, communications and office logistical support to Lucy Aquino to enable her to continue to mobilize and coordinate conservation efforts for the Atlantic Forest in Paraguay. Lucy is responsible for the implementation in Paraguay and in the entire Upper Paraná Atlantic Forest ecoregion (along with the coordinator of Brazil and Argentina), of all the activities presented in this implementation plan. She will implement activities directly (as implementer or coordinator) or through sub-grants with partner institutions (as facilitator, mobilizer, and supporter). Lucy Aquino will continue regular communication with multiple Paraguayan governmental and non-governmental institutions to guide and create synergy among their activities toward achieving shared long term objectives for the conservation of Atlantic Forest Biodiversity and to avoid duplication of efforts. To coordinate activities at the ecoregional level, Lucy will maintain regular communication and meetings with the WWF Atlantic Forest coordinators in Brazil and Argentina and with members of the WWF network around the world.

More than ten institutions are now contributing to formulating new and realistic conservation policies in Paraguay. Lucy will continue to manage sub-grants to partners to implement key activities to achieve local results and also leverage additional funding and support to expand projects and programs for the conservation and the sustainable use of the ecoregion.

Lucy and WWF network staff will also continue to contact other donor institutions outside Paraguay to raise more funds to develop activities toward achieving the Biodiversity Vision goals. The Nature Conservancy and WWF have signed an MOU to work collaboratively with other Paraguayan organizations to implement programs in the Core Areas of the Upper Parana Atlantic Forest in Paraguay.

Lou Ann Dietz , WWF-Senior Program Officer for the Atlantic Forest Ecoregion, based in Washington DC, is the supervisor to Lucy Aquino's program in Paraguay, and also coordinates WWF fundraising activities for the Atlantic Forest ecoregion. Nancy DeMoraes, the Washington-based WWF Desk Officer for the Paraguay Program, provides supervision and logistical support.

Anticipated Outputs/Results for Activity 1.1:

- 1) Implementation of an action plan to achieve the action targets, including a monitoring system, for the Upper Paraná Atlantic Forest Biodiversity Vision, which is discussed and agreed by government and NGO partners in Paraguay.
- 2) Strengthened partnership among the WWF Atlantic Forest Team: Paraguay, Argentina and Brazil.
- 3) Strengthened Paraguayan partner institutions with sufficient technical and financial resources to effectively implement the action plan for FY03.
- 4) Additional funds and technical assistance leveraged for the implementation of actions toward achieving the Biodiversity Vision in the Upper Parana Atlantic Forest ecoregion.

Level of Effort for Activity 1.1:

\$ 103,069 (USAID)

Activity 1.2: Promote the implementation of the Biodiversity Vision in the Upper Paraná Atlantic Forest Ecoregion, creating a network of Brazilian, Argentine, and Paraguayan institutions sharing the same objectives and conservation strategy.

Activity 1.2.1:

WWF will organize a tri-national forum of partners in Brazil, Argentina, and Paraguay to discuss the Upper Paraná Biodiversity Vision and current and future activities needed to achieve it. At the forum WWF and partners will:

1. Discuss and give feedback on the latest version of the Biodiversity Vision WWF developed with their earlier input.
2. Discuss, evaluate and integrate the Vision in the organizations' action plans.
3. Clarify the roles of WWF and partners in the implementation of the Biodiversity Vision

4. Prioritize immediate actions needed in each country.
5. Discuss mechanisms to disseminate the Biodiversity Vision widely in the ecoregion.

Anticipated Outputs/Results for Activity 1.2.1:

- 1) A general consensus among partners of Brazil, Argentina and Paraguay on the latest version of the Biodiversity Vision and the priority actions needed to achieve it.
- 2) Partners of Brazil, Argentina and Paraguay mobilized and acting in synergy to achieve Biodiversity Vision targets for the Upper Parana Atlantic Forest Ecoregion
- 3) Stakeholders in the region aware of the Biodiversity Vision and Action Plan for the Upper Paraná Atlantic Forest and supporting its implementation.
- 4) The roles of WWF and of partners in implementing the ecoregion action plan are clarified.

Level of effort for Activity 1.2.1:

To be implemented with WWF network funds.

Activity 1.2.2:

Develop a tri-national strategy (Paraguay, Argentina and Brazil) to increase trans-boundary control of illegal trade in Atlantic Forest timber, non-timber forest products, and wildlife.

- 1) Through the tri-national forum (see Activity 1.2.1) mobilize partners to work with Brazilian, Argentine and Paraguayan foreign offices and law enforcement agencies to develop a strategy for enforcement of pertinent laws.
- 2) Mobilize partners to work with the Mercosur Group 6 to develop a strategy for trans-border enforcement of environmental laws.

Anticipated Outputs/Results for Activity 1.2.2:

- 1) Increased communication among the law enforcement agencies of the three countries regarding enforcement of laws concerning timber and wildlife trade
- 2) Coordinated law enforcement to reduce transport of illegal timber and wildlife from Paraguay to Brazil.

Level of effort for Activity 1.2.2:

To be implemented in coordination with Activity 1.1 and WWF network funds.

Activity 1.3: Refine and Monitor the Atlantic Forest Biodiversity Vision

The WWF Atlantic Forest Coordinators (Paraguay, Argentina and Brazil) will develop with partners a process for monitoring the Vision:

1. Using birds as indicators, partner NGO Guyra-Paraguay will complete the biological assessment of ten core areas in Paraguay; they will also evaluate the conservation status of the forest at each site.
2. Guyra will also develop a system to monitor at each of the core areas the indicators: composition of the bird community and forest degradation status.
3. WWF will work with partners to identify other indicators and develop a monitoring plan.

Anticipated Outputs/Results for activity 1.3:

- 1) Baseline status for two indicators of the Biodiversity Vision determined for 10 sites in Paraguay
- 2) A long-term monitoring system for two indicators developed and initiated in ten sites in Paraguay.
- 3) Indicators identified for the Upper Paraná Atlantic Forest Ecoregion, and collection of baseline data initiated.
- 4) Baseline and subsequent collected information will be regularly incorporated into the Biodiversity Vision.

Level of effort for Activity 1.3:

To be implemented with WWF Network funds.

Objective II: Protect Key sites and Wildlife Populations

Level of effort for Objective II: \$54,415

Activity 2.1: Establish a policy framework in Paraguay for improved protection and management of existing protected areas**Activity 2.1.1: Develop local strategies for protection of core areas**

Partner institutions in Paraguay are using the preliminary Biodiversity Vision as a tool for their planning. NGOs are working in different core areas, some sharing objectives in one or more core areas. The Secretary of the Environment (SEAM) is a newly created government institution, still with a weak capacity to achieve its objectives, due to lack of adequate planning as well as lack of financial support. Fortunately the Global Environmental Fund (GEF), with the

United Nations Development Program (UNDP) and the Inter American Development Bank (IDB) as implementing agencies, is allocating funds to strengthen the Secretariat. UNDP is also implementing a medium GEF supplementary-- grant to update the SINASIP (National System of Protected Areas). The Direction of National Parks published the SINASIP in 1993 with financial support of USAID and technical and financial support of the Parks in Peril Program of the Nature Conservancy (TNC). Unfortunately, the SINASIP was very weak and unrealistic as a tool for establishing protected areas. Several areas (such as Ñacunday National Park, Kuriy National Reserve, Moises Bertoni Scientific Monument) identified for protection in the SINASIP, are now lost to agricultural fields. The few protected areas of the System, which could still be viable now such as Ybycui and Cerro Corá National Parks, Yvytyrusu, and San Rafael Natural Management Resource Areas) are subject to severe human pressure from both inside and outside their limits. With the support of UNDP, SEAM is planning to update the SINASIP incorporating the Biodiversity Vision as one of the planning tools.

The incorporation of the Biodiversity Vision in the SINASIP document, will identify ecoregion-scale conservation priorities in Paraguay and strengthen the strict protection of core forested areas. The WWF Paraguay Atlantic Forest coordinator, with SEAM and NGO partners will work together to develop a supportive policy for implementing the Biodiversity Vision, directed toward specific short, medium, and long-term targets.

Anticipated Outputs/Results for Activity 2.1.1:

- 1) Improved government policy master plan for implementing priority areas for strict protection (core areas).
- 2) The Biodiversity Vision incorporated into the planning of government and non-government partners.
- 3) Local institutions collaborating to establish strategies to achieve the Biodiversity Vision.
- 4) Additional funds and technical support made available to broadly disseminate the Biodiversity Vision and implement action plans to achieve it.

Level of effort for Activity 2.1.1:

To be implemented in coordination with Activity 1.1.

Activity 2.1.2: Disseminate the Biodiversity Vision

The WWF network has identified the Atlantic Forest as a one of the Global 200, one of the most biodiverse but also most threatened ecoregion in the world. The WWF Atlantic Forest team and partners are working to implement conservation actions as urgently as possible, but they cannot do it alone. To implement effective actions in the region the WWF team and partners need technical as well as financial support from other organizations working in Latin America. Annual meetings organized to gather professionals working in science and conservation, are good environments to disseminate our work and conservation objectives and strategy and to stimulate the scientific and conservation community to help implement the conservation work in this very threatened ecoregion. The WWF Paraguay office is very small, and even though several

NGOs, GOs and the University are working in the Atlantic Forest, they need more support to disseminate our objective, strategies and gain more interest to develop urgent actions.

WWF will provide small grants to support Paraguayan partners working in the Upper Parana Atlantic Forest ecoregion to participate in meetings, workshops, and courses to increase their capacity, to help disseminate our Biodiversity Vision and to leverage more support from other scientific and conservation organizations.

Anticipated Outputs/Results for activity 2.1.2:

- 1) Increased contribution of the conservation and scientific community to support actions to achieve the Biodiversity Vision..
- 2) Increased promotion of the Biodiversity Vision by partners

Level of effort for Activity 2.1.2:

\$2,611 (USAID)

Activity 2.2: Protect and connect core areas identified in the landscape design of the Biodiversity Vision for the Upper Parana Atlantic Forest Ecoregion

The WWF Atlantic Forest Coordinators are still working to finalize a Biodiversity Vision document for publication. Additional analyses are being completed to refine the priorities and develop specific short, medium, and long-term targets or "milestones" toward achieving Vision. These targets include:

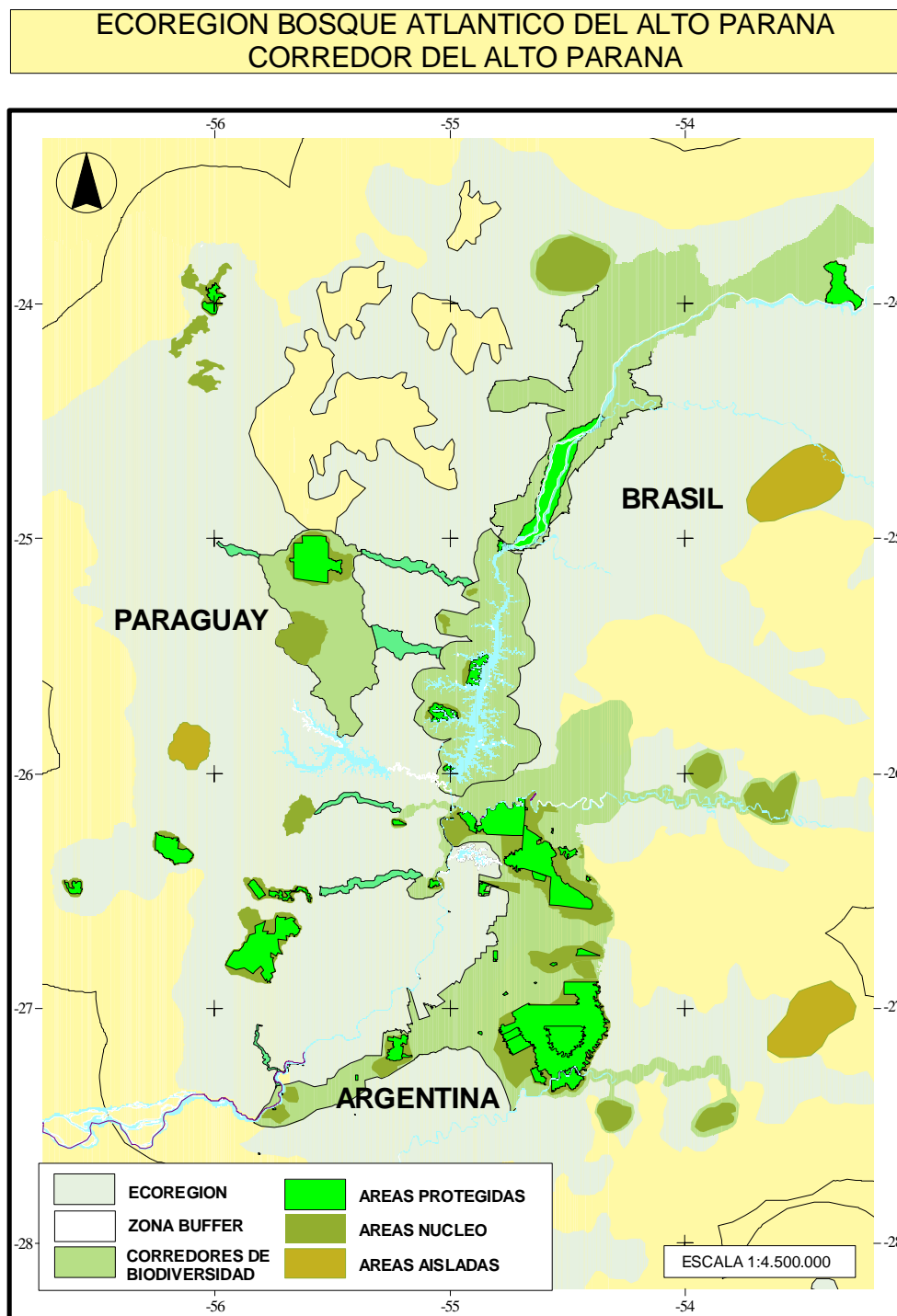
50-year Overall Conservation Target: Implementation of the Upper Paraná Tri-National Corridor consisting of core protected areas linked by biological corridors, surrounded by multiple use areas.

50- year Target 1: Approximately 2,000,000 ha of native forest blocks (35 core areas) under strict protection and effective management, including restoration.

50-year Target 2: A network of biological corridors of native forests, connecting 35 core areas, are implemented (restored connectivity and effectively managed) thus ensuring genetic flow and the long-term viability of umbrella species (jaguar).

50-year Target 3: approximately six million hectares of sustainable use areas, surrounding the network of core areas and biological corridors, are implemented (under land-use plans with environmental services maintained or restored).

The Tri-National Biodiversity Corridor is composed of five priority areas (see map below): *Cerro Corá Priority Area; Mbaracayú Priority Area; Río Paraná Priority Area, San Rafael Priority Area and Iguacu-Misiones Priority Area.* Our proposed actions focus on the above 3 long-term targets in each of these five priority areas.



Activity 2.2.1: Cerro Corá Priority Area**Background**

The Cerro Corá priority area includes three protected areas administered by the Paraguayan National Park Service (Cerro Corá National Park, Cerro Guazu Indigenous Reserve and Cerro Sarambi Resource Management Reserve), and the Arroyo Blanco Private Reserve. The land tenure of Cerro Guazu and Cerro Sarambi is still in private ownership, and the forest has been severely degraded. The Arroyo Blanco Private Reserve is well preserved, and the owner is interested in developing eco-tourism and environmental education activities with the community in the buffer zone. The Cerro Corá priority area also includes the only property in Paraguay (Jaguarete Forests) that was managing its forest according to the Forest Stewardship Council (FSC) criteria for certification of sustainable timber production. Because of low profits, the owners terminated the forest management program in 2000 and sold the property. The new owners plan to convert the forest to agriculture and raising livestock. Because of the current difficult economic situation in Paraguay, many owners of valuable forest in this priority area are selling their land for conversion to agriculture. The Nature Conservancy and WWF have signed an agreement to collaborate with local partners to raise emergency funds for protection (purchase or other mechanisms such as easements and payments for ecological services) of this and other core areas of Atlantic Forest in Paraguay before they disappear entirely.

The "Conservation Alliance" formed by three Paraguayan NGOs -- Guyra-Paraguay, Natural Land Trust, and IDEA (the Environmental Law Institute) -- is currently completing implementation a "Pilot Project to Consolidate the Biodiversity Vision in the Upper Paraná Atlantic Forest Ecoregion" in the Cerro Corá priority area. The objectives of the project are:

- 1) to define the ecological and administrative limits of the core areas and biological corridors identified in the Biodiversity Vision;
- 2) assess the land tenure in these areas;
- 3) identify local stakeholders;
- 4) assess land use and future trends;
- 5) evaluate the biodiversity and conservation status of each core area and biological corridor;
- 6) complete an analysis of threats and opportunities for each core area and corridor.

The USAID Mission in Paraguay provided direct funding (purchase order) for this project. The Conservation Alliance will present the final report to USAID on September 30, 2002, and subsequently share it with WWF, TNC, and other partners to serve as a basis for planning next steps. As a part of this project the Alliance has been working with several local stakeholders, especially landowners, to develop a long-term strategy toward achieving the Biodiversity Vision. Through the project, the Alliance hopes to strengthen the capacity of the local community to implement programs in environmental education and law enforcement. The Nature Conservancy has committed some funding to developing a site conservation program in one of the core areas identified by the project.

WWF's efforts in this priority area will concentrate on assuring coordination of these partner efforts toward achieving the Biodiversity Vision, assisting the partners in raising funds for

implementing core areas, and building the capacity of local partners to implement environmental education and ecotourism strategies.

We have identified the Association for the Protection of the Environment of Amambay (APMA) as an important partner to develop an education program in this priority area. APMA was established to promote environmental awareness and education as well as activities to protect the natural resources of the Department of Amambay. Since its creation in 1986, APMA has organized workshops and courses in the Cerro Corá National Park, targeting rural communities, teachers, students, scout groups, and training volunteer firefighters.

Core areas for protection:

- Cerro Corá National Park - 6,005 ha
- Arroyo Blanco Private Reserve – 5,714 ha
- Cerro Sarambi Resource Management Reserve – 23,144 ha
- Cerro Guazu Indigenous Reserve – 23,773 ha

WWF Activity planned for FY03: Strengthen the capacity of local partners to implement strategic actions toward achieving the Biodiversity Vision.

- 1) Involve Arroyo Blanco Private Reserve in the Ecotourism program that CICOAM is developing (see activity 3.2.1).
- 2) Provide technical assistance to the local NGO APMA to develop and implement an environmental education program designed to build local community support for protection of the core areas of Atlantic Forest in the Cerro Corá priority area.
- 3) Leverage financial support for partners to assess the conservation status of the forest in the Cerro Guasu and Cerro Sarambi reserves and to develop a refined landscape design in each of these two core areas.

Anticipated Output/Results for Activity 2.2.1.:

- 1) Arroyo Blanco Reserve initiates an ecotourism program to promote protection of the core areas in the Cerro Corá priority area.
- 2) Local NGO (APMA) developing strategic environmental education programs to build the local community support for the protection of the Cerro Corá priority area and the Cerro Corá National Park.
- 3) Funding available for partner Guyra to initiate an assessment of the conservation status of the forest in the Cerro Guasu and Cerro Sarambi reserves to refine the landscape design for these two core areas.

Level of effort for Activity 2.2.1

To be implemented in coordination with Activity 1.1

Activity 2.2.2: Mbaracayú priority area

This priority area includes three core areas: the Mbaracayú Reserve, the La Golondrina Private Reserve, and the newly established Capiibary Ecological Reserve. The Mbaracayú Reserve is the core area under strict protection which is part of the Mbaracayú Biosphere Reserve, the first Biosphere Reserve established in Paraguay. The Mbaracayú Reserve, privately owned and managed by the Moises Bertoni Foundation (FMB), constitutes the best-protected core area of the Upper Paraná Atlantic Forest Ecoregion in Paraguay. However, recent scientific data document over-hunting inside the limits of the Mbaracayú Reserve. This is a result of illegal hunting and perhaps also of legal hunting by members of the Ache indigenous group who maintain a traditional culture based on the forest and are allowed to hunt in the Mbaracayú Reserve. The FMB is developing strategies to address the overhunting problem with the local communities, including the Ache as well as landless people. With support last year from WWF/USAID, FMB provided training in protected area management for six Ache leaders.

WWF and FMB also worked with the Paraguayan government to secure a 150-year concession to an Ache group for conservation and sustainable use of a 4,629-hectare parcel (to be purchased with environmental impact compensation funds- IDB loan - of a project to asphalt a highway) bordering the Mbaracayú Reserve Core area, within the Biosphere Reserve. The Ache will protect the forest on their land and assist in protecting the Mbaracayú Reserve from logging. WWF/FMB are helping the Ache to establish themselves on this parcel and to develop a management plan. It is hoped that this Ache group can maintain their area as a buffer zone between the Mbaracayú Reserve and the surrounding agricultural lands in the Biosphere Reserve. FMB is also negotiating to enlarge the Mbaracayú Reserve by acquiring an additional forested parcel (known as the "Chino" property) on the southeast corner of the reserve.

La Golondrina Private Natural Reserve was recognized as such by official Presidential Decree on October 11, 2001. With funds from other sources, the FMB is providing technical assistance to help the owner to implement the management plan.

WWF and partners have recently made progress to effectively protect an additional core forest area on government land located in the southwest corner of the Mbaracayú priority area. The area was originally a 20,000-hectare forest reserve under the responsibility of the Paraguayan Forest Service, but corruption in the Forest Service allowed much of this area to be illegally logged and converted to agriculture by landless peasants. Concerned about this situation, the Joint Commission for Natural Resources of the Paraguayan Congress came to WWF for advice on how to effectively protect the remaining 5,000ha of forest. As a result of this collaboration, on August 12, 2002, a presidential decree officially created the Capiibary Ecological Reserve, giving the responsibility for its protection to the Secretariat of the Environment (SEAM) and including funds for the Reserve's management in SEAM's general budget from now on. WWF will provide further technical assistance and promote partner collaboration with the Secretariat to advance toward the effective protection of this core area.

Core areas for protection:

- Mbaracayú Natural Reserve – 59,056 ha
- La Golondrina Private Natural Reserve (or Mborombi Private Reserve) – 25,000 ha

- Capiibary Ecological Reserve - 5,000ha

Activity 2.2.2a: Implement an education and law enforcement program to reduce biodiversity loss and breakdown of ecological processes in the Mbaracayú Biosphere Reserve and Jejui Guasu Watershed

WWF will provide financial support and technical assistance to the Moises Bertoni Foundation to:

- a. Develop a strategy with the Environment Attorney General to implement a law enforcement mechanism focusing on the areas of the Mbaracayú Reserve (Core Area) where overhunting has been documented.
- b. Develop an environmental education campaign to build support of the local residents for the protection of the Mbaracayú core area and the conservation of the entire Biosphere Reserve. The campaign will include the use of mass media and utilize informational materials already developed by FMB.
- c. Provide technical support and coordinate work with the government and the Ache Group to finalize government acquisition and develop a management plan for the Ache land bordering the Mbaracayú Reserve.
- d. Continue to develop a strategy for acquisition of the "Chino land" parcel (on the Southeast boundary of the Mbaracayú Reserve) and officially incorporate it into the Mbaracayú Reserve.
- e. Raise additional matching funds to complete this activity.

Anticipated Outputs/Results 2.2.2a:

1. Reduction in illegal hunting in the Mbaracayú Reserve
2. Increased support of residents of the Mbaracayú Biosphere Reserve and Jejui Guasu Watershed for the protection of the Mbaracayú core area.
3. Increased area under effective protection and management: the 5,000 ha (Chino property and Ache concession) situated on the southeast border of the Mbaracayú Reserve is incorporated to the Reserve and a management plan under implementation with the participation of the Ache Indians.

Level of effort for Activity 2.2.2a:

\$11,512 (USAID)

Activity 2.2.2b: Demarcate the remaining forest in the Capiibary Reserve – the first step to its effective protection

Due to the increased protection of this forest block, the Capiibary Ecological Reserve will be considered a core area of the Mbaracayú Priority Area. WWF will provide technical and financial assistance to partner organization Alter Vida to:

- 1) demarcate the remaining forest land and do a rapid ecological assessment of the quality of the forest;
- 2) develop a strategy to strengthen the conservation status of the Reserve;
- 3) work with the surrounding community to prevent invasions by landless people

WWF will seek to raise additional funds to continue with additional activities required to fully protect this new Reserve.

Anticipated Outputs/Results 2.2.2b:

- 1) A demarcation of the Capiibary Reserve completed
- 2) Effective protection of the Reserve
- 3) Local community recognizing the importance of the Reserve in protecting the quality of life in the area
- 4) The Reserve serving as an effective Core Area in the Mbaracayú priority area.

Level of effort for Activity 2.2.2b:

\$11,512 (USAID)

Activity 2.2.3: Río Paraná priority area

This priority area includes three protected core areas in Brazil (Parque Estadual das Varzeas do Río Ivinhema, Parque Estadual Morro do Diabo and Parque Nacional Ilha Grande), and in Paraguay six protected areas administered by ITAIPU Bi-Nacional (the Paraguay/Brazil bi-national government hydroelectric dam company) and a private reserve. These areas are currently too small and isolated to effectively serve as core areas to conserve biodiversity and processes. In addition to effective protection of these core areas, restoration of native forest to connect them is needed.

The ITAIPU reserve areas in Paraguay are relatively well protected; however their buffer zone have serious problems of illegal logging. ITAIPU also has a program of native forest restoration in the area along the Paraná River in Paraguay between Saltos del Guaira and the ITAIPU Dam (Polygonal Envolvente). The Itabo Reserve is implementing several sustainable non-timber uses of the forest, such as the cultivation of organic yerba mate and palmito.

Core areas for protection in Paraguay:

- Carapa Biological Refuge (administered by ITAIPU) – 2,915 ha
- Limoy Biological Reserve (Administered by ITAIPU) – 11,866 ha
- Itabo Biological Reserve (Administered by ITAIPU) – 9,885 ha
- Tati Yupi Biological Refuge (Administered by ITAIPU) – 2,275 ha

- Itabo Private Natural Reserve – 5,186 ha
- Pikyry Biological Reserve (Administered by ITAIPU) -1,197ha
- Mbaracayú Biological Reserve (Administered by ITAIPU) -1,396ha

Activity 2.2.3a: Promote communication within ITAIPU Binacional to coordinate the forest restoration program in the Paraguayan and Brazilian portions of this priority area.

WWF will:

- Facilitate the communication among the ITAIPU (Brazil and Paraguay) partners and the other Brazilian partners working on forest restoration in this priority area;
- Provide technical support to ITAIPU staff using the Biodiversity Vision as their planning tool for restoration, environmental education, and law enforcement programs in their protected areas and buffer zones.
- Leverage support from ITAIPU for implementation of these activities.

Anticipated Outputs/Results for Activity 2.2.3a:

- 1) ITAIPU Paraguay coordinating methodologies and priority efforts with ITAIPU Brazil and other partners on the Brazilian side of the priority area
- 2) A common agenda based on the Biodiversity Vision developed for conservation actions in the core areas and their buffer zones.

Level of effort for Activity 2.2.3a:

To be implemented in coordination with Activity 1.1

Activity 2.2.3b: Promote the activities of the Itabo Private Reserve as a model for other landowners

WWF will work with ITAIPU and local NGO's to leverage financial support to:

- a) Coordinate meetings to promote sustainable use of forest with forest landowners in the Río Parana priority area
- b) Promote Itabo Reserve as a demonstration of sustainable use of forest.

Anticipated Outputs/Results for Activity 2.2.3b:

- 1) A viable sustainable use program disseminated as a model for other forest land in the Río Paraná priority area
- 2) Increased interest in production of sustainable non-timber forest products among forest landowners.

Level of effort for Activity 2.2.3b:

To be implemented in coordination with Activity 1.1

Activity 2.2.4: San Rafael Priority Area**Background**

As a result of partner requests, the San Rafael National Park, one of the core area identified in the Biodiversity Vision, changed its protection from National Park to Natural Resource Management Area by Presidential Decree number: 16,610, signed on March 7, 2002. This new category means that conservation efforts do not have to wait for the government to acquire the land – an improbable event. Properties in a Natural Resource Management Area remain in private hands, but use must be according to an agreed management plan. Since the Biodiversity Vision defines a core area under strict protection, the San Rafael core area will have to be redefined. The partners are promoting sustainable use programs in the area; however they are also promoting the acquisition of land for strict protection. The Conservation Alliance (Guyra-Paraguay, IDEA, NATURAL Land Trust and Pro-Cosara) has raised funds for development of conservation programs and acquisition of land in San Rafael from the following institutions: The Nature Conservancy (\$4,000); Garfield Foundation (\$200,000); Canadian International Development Agency - CIDA (\$ 25,000); Yacyreta Binational Entity (\$ 5,000); USAID (\$50,000), donations resulting from clicks on Guyra's web page (\$ 4,000). The Alliance is developing a project "Pilot Project to Consolidate the Biodiversity Vision in the Upper Paraná Atlantic Forest ecoregion. The project received direct funding (purchase order) from USAID and includes activities in Cerro Corá (see Activity 2.2.1) and in San Rafael priority areas. The objectives in San Rafael include: 1) Determine the legal status of forest activities; 2) determine the validity of the forest management plan in San Rafael; 3) ensure follow up of legal cases opened to prosecute illegal logging; 4) evaluate the possibility of establishing more private protected areas. The Alliance will share the results of the project on October 1, 2002. The Alliance has also presented funding proposals to the following institutions: French Funds for the Environment - FFEM (Euros \$1,800,000 for five years); Global Conservation Funds - Conservation International - GCF-CI (\$ 3,000,000 for five years for acquisition of land, land trust, conservation easements and direct payments for conservation); World Park Endowment Fund (\$ 60,000 for Indigenous Program in San Rafael); Garfield Foundation (\$ 300,000) for the acquisition of Land; Center for Tropical Conservation - RARE and Bird life International (\$ 45,000). With this level of continued effort, the Conservation Alliance expects to be able to acquire land in San Rafael during the next year. Pro-Cosara, part of the Conservation Alliance, continues to implement with technical support from the Environmental Attorney's Office, a private law enforcement system to increase protection of the San Rafael Natural Resource Management Area,

The category of Yvytyrusu National Park was also changed last year to Natural Resources Management Area by Presidential Decree number 14.945 signed on October 9, 2001. This is a more realistic status due to the number of families (1,000) that live inside the Yvytyrusu area's limits. Alter Vida continues developing a conservation program in the area and working with the landowners to develop a management plan for the Reserve.

A very good opportunity has arisen to acquire a small piece of property in the middle of the Yvytyrusu Reserve. The land is being offered at US\$60 per hectare to the Friends of Paraguay, a US NGO formed by returned Peace Corps Volunteers. The Paraguayan Ambassador to the US is working with the Friends of Paraguay to raise the funds needed for Alter Vida to acquire the land. Alter Vida is requesting support from the GEF-supported program of the Paraguayan Government to develop a study on how to connect the core areas of the San Rafael Priority area (San Rafael Managed Reserve; Caaguazu National Park; Yvytyrusu Natural Resource Management Area, and Ybycui National Park).

Core areas for protection:

- San Rafael Natural Resource Management Area – 58,490 ha
- Yvytyrusu Natural Resource Management Area – 16,220 h
- Caaguazu National Park – 12,738 ha
- Ybycui National Park – 3,804 ha
- Ypeti Natural Private Reserve – 10,000 ha
- Tapyta Natural Private Reserve – 4,085 ha

WWF Activity planned for FY03:

- a) WWF will provide Pro-Cosara with funding to acquire equipment for the law enforcement in San Rafael Resource Management Area.
- b) WWF will provide NGO Alter Vida technical support to continue working with the community to strengthen the conservation programs in Yvytyrusu Resource Management Area.
- c) WWF will seek to raise additional matching funds (\$20,000) to complete the activity.

Anticipated Outputs/Results for Activity 2.2.4.

- 1) The Pro-Cosara law enforcement program strengthened to increase protection of the San Rafael Resource Management Area
- 2) Increased resources for the Alliance to purchase a core area for strict protection in the San Rafael Resource management Area
- 3) Strengthened and effective implementation of the Yvytyrusu Resource Management Area as a community conservation area

Level of effort for Activity 2.2.4:

\$ 28,780 (USAID)

Activity 2.3: Priorities and policy established for creation of new protected areas - develop a land acquisition strategy to protect core conservation areas

Several initiatives for the acquisition of core areas for strict protection have been mentioned for each priority area:

- 1) Mbaracayú Priority Area: land on the south-east corner of the Mbaracayú Reserve

- 2) Mbaracayú Priority Area: Capiibary Forest Reserve
- 3) San Rafael Priority Area: Core Area of San Rafael Managed Resource Reserve
- 4) San Rafael Priority Area: Core Area In Yvytyrusu Managed Resource Reserve
- 5) Conservation Easements
- 6) Private Reserves

WWF will continue to work with The Nature Conservancy, the Paraguayan Secretary for the Environment, and local NGO partners to develop an overall strategy for protection of core areas and to develop mechanisms to fund the strategy (debt for nature swaps, fundraising events with the Paraguayan Ambassador to the US, easements, fundraising with European development agencies, ecotourism strategy, better practices for agriculture, etc.).

Anticipated Outputs/Results for Activity 2.3:

- 1) Acquisition of 5,000 ha for Ache Reserve adjacent to Mbaracayú Reserve
- 2) Acquisition and protection of 5,000 ha for Capiibary Ecological Reserve in the southwest of the Mbaracayú priority area.
- 3) Acquisition or leasing of 14,000 ha in San Rafael Managed Resource Area
- 4) Acquisition of 5,000 ha in Yvytyrusu in San Rafael Managed Resource Area
- 5) Seven new Conservation Easements
- 6) Seven new private Reserves

Level of effort for Activity 2.3:

To be implemented in coordination with Activity 1.1; funding mechanisms are included in activities 3.2, 3.3, 3.4, and 4.2 below.

Objective III: Shape regional development to support conservation

Level of effort for Objective III: \$31,004 (USAID)

Activity 3.1: Reduce unsustainable logging practices – certify sustainable commercial

Atlantic Forest products operations

WWF has recently signed a grant agreement with NATURAL Land Trust to determine the feasibility of timber certification as a tool for implementing the Biodiversity Vision in Paraguay as well as to determine if community forest management is feasible in the Upper Parana Atlantic Forest Ecoregion in Paraguay. NATURAL is also developing research in the San Rafael core area to determine the capacity of the forest for sustainable use and management.

With WWF support, NATURAL will:

1. promote additional research on forest management and sustainable harvest in other areas of the UPAF ecoregion
2. disseminate existing information on forest management and sustainable harvest.
3. Develop a strategy for sustainable forest management and conservation by small producers
4. If Timber Certification(FSC) is determined to be an important tool for the conservation of the UPAF ecoregion, develop national criteria for certification in Paraguay.
5. Raise additional funds needed (\$18,000) to complete this activity

Anticipated Outputs/Results for Activity 3.1:

- 1) New information on management and sustainable harvest of forest made available for the conservation of the UPAF ecoregion
- 2) Small producers will have access to information on forest management and conservation
- 3) Feasibility of certification determined; development of criteria for certification of forest or for sustainable forest use

Level of effort for Activity 3.1:

Implemented in coordination with Activity 1.1

Activity 3.2: Establish alternative economic activities to increase the value of the forest

CICOAM (Centro Internacional de Capacitación de Organizaciones Ambientalistas y de Desarrollo) is increasing its capacity to implement ecotourism in Paraguay. WWF has facilitated a process to determine the feasibility of ecotourism as an economic alternative for Paraguay portion of the ecoregion. In addition to the economic incentive, landowners with Private Reserves and Conservation Easements are interested in implementing ecotourism programs on their land to increase the awareness of the forest.

WWF will provide technical and financial support to CICOAM to:

1. Identify areas where ecotourism can be implemented in the UPAF in Paraguay.
2. Develop a national ecotourism program, in coordination with Argentina and Brazil.
3. Strengthen its own capacity to implement ecotourism programs.
4. Request support from the USAID Microenterprise Unit for the development of a pilot ecotourism initiative.

Anticipated Outputs/Results for Activity 3.2:

- 1) A strategic plan for ecotourism in Paraguay completed.
- 2) Argentina, Paraguay and Brazil sharing lessons learned in ecotourism
- 3) CICOAM's capacity in eco-tourism strengthened.
- 4) Resources available to develop a pilot ecotourism initiative

Level of effort for Activity 3.2:

Supported with FY02 funds (USAID) and WWF network EFN funds.

Activity 3.3: Assess the current status of the soybean and wood industry in Paraguay and identify key issues to address in a conservation strategy.

Deforestation for soybean plantation is one of the major threats to the Upper Parana Atlantic Forest Ecoregion in Paraguay. Assessment of the situation and the development of realistic land use planning is both crucial and urgent. ACORDES (Acción Cooperativa Orientada al Desarrollo Sostenible – Cooperative Action Oriented toward Sustainable Development), a local NGO, has organized workshops with cooperatives to implement better practices in agriculture. ACORDES organized two workshops in 2001 on law enforcement and better practices in agriculture and restoration of riparian forest. Lucy Aquino identified ACORDES as one of the key partners to implement conservation and sustainable development through better agricultural practices in the San Rafael, Iguazu-Misiones and Rio Parana priority areas.

Lucy Aquino is participating in a working group looking at issues relating to soybeans to develop a WWF network position. A WWF-US consultant from visited Paraguay and initiated contacts with institutions that can help to implement a program to promote improved practices for soy cultivation that are compatible with forest conservation.

WWF will work with these new partners in three priority areas to:

1. Facilitate workshops with landowners to improve practices in agriculture and to conserve watersheds.
2. Develop with ACORDES and landowners a strategic plan for restoration of forest that should have been preserved according to national forest legislation (watersheds, percentage of property in forest, etc.).
3. Work with Jason Clay (WWF consultant for soybean issues) and WWF network to conduct studies to determine market for soy cultivated according to “best practices”.
4. Work with the WWF network, NGO partners and policy makers in the region and globally to eliminate perverse incentives and to adopt incentives for sustainable land use.

WWF will work with the WWF network to raise additional funds for the implementation of this program.

Anticipated Outputs/Results for Activity 3.3:

- 1) Improved agriculture practices promoted among landowners in priority areas: San Rafael, Iguazu-Misiones, and Rio Parana.
- 2) A strategic plan for forest restoration developed with ACORDES and landowners.
- 3) Market study completed to inform strategies related to the soy issue in the ecoregion.
- 4) Strategies developed with policy makers, NGO partners, and the market to eliminate perverse incentives and promote positive incentives for conservation and sustainable use.

Level of effort for Activity 3.3:

\$ 1,151 (USAID) and WWF network funds.

Activity 3.4: Establish a land use policy framework that supports conservation**Activity 3.4.1: Develop community environmental education programs in rural areas and buffer zones of protected areas.**

Alter Vida and the Peace Corps are working together to develop a Manual for the Upper Parana Atlantic Forest Ecoregion. This manual includes the ecological elements of this ecoregion, its environmental problems, the socio-economic aspects, and suggests possible actions to be integrated in the solutions. This includes integrating the identification and solution of community environmental problems into the school curriculum at all levels: for teachers and education policy. The project includes workshops for teachers. WWF will work with partner Alter Vida to raise additional funds for the dissemination of the Manual.

Anticipated Outputs/Results for Activity 3.4.1:

1. Communities in protected area buffer zones actively involved in activities for conservation of the Upper Parana Atlantic Forest Ecoregion.
2. Knowledge and skills necessary for land, water and forest conservation integrated into school curricula.
3. Teacher training programs conducted to develop solutions to community conservation problems.
4. Training in participation skills through multipliers to multiple sectors.

Level of effort for Activity 3.4.1:

Implemented in coordination with Activity 1.1

Activity 3.4.2: Establish seven conservation easements with private landowners

NATURAL Land Trust is working to establish eight more conservation easements in 2002, and seven more are planned for 2003 in different priority areas. Legal aspects are being refined.

Anticipated Outputs/Results for Activity 3.4.2:

1. Seven additional conservation easements in the Upper Parana Atlantic Forest in Paraguay.
2. Conservation easements developing as an important conservation tool in Paraguay.

Level of effort for Activity 3.4.2

\$ 12,585 (USAID)

Activity 3.4.3: Establish seven private reserves with landowners

The Moises Bertoni Foundation (FMB) is working to increase the establishment of Private Reserves in the Upper Parana Atlantic Forest Ecoregion in Paraguay. Two private reserves currently have legal status, four more are waiting for the Presidential Decree. FMB is promoting seven more Private Reserves for 2003.

Anticipated Outputs/Results for Activity 3.4.3:

1. Increased network of private land reserves (7 more areas) in the Upper Parana Atlantic Forest in Paraguay.
2. Private Reserves developing an important role in Paraguay.

Level of effort for Activity 3.4.3:

\$ 8,058 (USAID)

Activity 3.5. Continue a campaign in Paraguay to enforce the Forest Law and increase the participation of civil society in efforts to eliminate illegal logging.

WWF will provide technical and financial support to IDEA to:

1. with technical support of the Judicial Investigation Center of the General Attorney Office (Centro de Investigaciones Judiciales de la Fiscalia General del Estado) prepare a strategic plan to implement an enforcement system in key areas of illegal logging in UPAF ecoregion.
2. Provide logistic support to strengthen the capacity of Paraguayan Environmental Prosecuting Attorney's Office (Fiscalia del Medio Ambiente) to enforce laws to control logging and wildlife trade.
3. IDEA will develop workshops in key towns to build the capacity of Paralegals in the protection of the UPAF ecoregion.
4. WWF will work with partners to raise additional funds to implement this activity.

Anticipated Outputs/ Results for Activity 3.5:

- 1) A strategic plan for law enforcement in key regions within the UPAF ecoregion.
- 2) The strategic plan serving as a tool to guide the Environmental Prosecuting Attorney Office activity during fiscal year 2003

- 3) The Environmental Prosecutor's Office actively enforcing the forest and wildlife laws in the Upper Parana Atlantic Forest in Paraguay.
- 4) A group of Paralegals is formed and strengthened in the UPAF ecoregion of Paraguay.

Level of effort for Activity 3.5:

\$ 9,210 (USAID)

Objective IV: Establish long-term conditions and capacities needed to sustain conservation

Level of effort for Objective IV: \$11,512

Activity 4.1: Public awareness of the value of the Atlantic Forest increased

Develop an educational campaign in the UPAF ecoregion and in the capital of Paraguay (Asuncion) to build public awareness of the value of forest and water for humans, including the broad scale impact of negative individual actions.

1. WWF coordinator for Paraguay will organize with local publicity agency (Biederman Publicidad), with technical support of the Environmental Education and Communication Departments of WWF-US, a campaign regarding the value of the ecological services of forest.
2. Biederman Publicidad will prepare a plan to be discussed with experts in WWF-US, with supervision of Lucy Aquino and Lou Ann Dietz.
3. WWF will work to raise additional funds to complete implementation of the strategy.

Anticipated Outputs/Results for Activity 4.1:

- 1) A public education campaign developed and implemented for the conservation and sustainable use of resources in the UPAF ecoregion.
- 2) Awareness, understanding and respect for the Forest increased among the general public.
- 3) Civil society demanding enforcement and respect for the forest to policy makers and authorities.
- 4) Increased resources made available in Paraguay for Atlantic Forest conservation.

Level of effort for Activity 4.1:

\$ 11,512 (USAID)

Activity 4.2: Develop mechanisms to provide sustained funding for Conservation actions to achieve the Biodiversity Vision for the Upper Parana Atlantic Forest Ecoregion

WWF will develop partnerships to devise joint strategies to raise and administer significant new funds.

WWF and TNC just signed a MOU to collaborate in several aspects of the implementation of the Biodiversity Vision in Paraguay, that includes:

1. Provide partners with technical support to implement ecoregion scale conservation and site conservation action in the UPAF ecoregion.
2. TNC and WWF will promote actions to raise funds for acquisition of lands and other protection mechanism in core areas.
3. Provide grants for activity to implement strategy to raise funds.

Anticipated Outputs/Results for Activity 4.2:

- 1) TNC and WWF working together to increase technical support for partners.
- 2) Strategy implemented to raise funds to implement Biodiversity Vision.
- 3) More funds available.

Level of effort for Activity 4.2:

Implemented in coordination with Activity 1.1

List of key staff involved:

- Aida Luz Aquino, WWF Atlantic Forest Coordinator for Paraguay
- Carmen Vitale, Assistant to WWF Atlantic Forest Coordinator for Paraguay
- Guillermo Placci, WWF/FVSA Atlantic Forest Coordinator for Argentina, FVSA
- Helena Maltez, WWF Atlantic Forest Coordinator for Brazil, WWF-Brazil
- Lou Ann Dietz, Senior Program Officer for the Atlantic Forest Ecoregion, WWF-US
- Nancy DeMoraes, Desk Officer for the Atlantic Forest Ecoregion, WWF-US
- Paula Tibabuzo, Contracts Coordinator for the Atlantic Forest Ecoregion, WWF-US

Other Specific Program Details

Monitoring & Evaluation

The implementation of actions to achieve the Biodiversity Vision is a long-term strategy for conservation of the Upper Paraná Atlantic Forest. A document including the technical documentation and justification for the Biodiversity Vision is being completed and will be widely disseminated to serve as a tool to guide conservation work of all stakeholders in this ecoregion. This Vision is a dynamic strategy that will evolve constant monitoring and adaptive modification to effectively address the realities of the region. An evaluation and monitoring plan is being developed with partner organizations (see activity 1.3). The experience of several conservation initiatives developed by the WWF Team and partners are already generating modification and suggestions for the Biodiversity Vision Action Plans. The overall indicator of the effectiveness of the actions is the maintenance of the remaining native Upper Paraná Atlantic Forest and a reduction in the deforestation rate in Paraguay. WWF and partners established a baseline map with satellite images from 1997 which showed that Paraguay retained a large area (1,152,332ha) of Upper Paraná Atlantic Forest, but that is only 13.4% of the original Atlantic Forest area in that country. Deforestation (currently the highest rate in Latin America) has greatly fragmented this area. WWF and partners will pursue the production of an updated map of forest cover in 2002 for comparison and dissemination.

Financial Sustainability

WWF is working with partners to raise significant additional funds and develop creative funding mechanisms to assure financial sustainability (See Objective IV above).

Gender Issues

WWF seeks to assure gender balance in travel and training support awarded. In work at the community level, WWF and partners consider the roles and participation of both men and women representing multiple sectors. Both women and men are involved in making decisions that affect the long-term conservation of the biodiversity of the Upper Paraná Atlantic Forest Ecoregion. In several cases women, including indigenous women, are emerging as community leaders in developing conservation actions.

Environmental Education & Communication

As part of the FY03 Implementation Plan the WWF team will develop strategies for an educational campaign through the media and at the local level in private reserves to assure public understanding of the value of the forests for human quality of life and a program to integrate solution of community environmental problems into the formal curriculum in rural schools and in Asuncion. These activities are described in the document above. The strategies will identify specific target audiences and behavior changes as well as strategies to achieve them.

Travel

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
WWF Atlantic Forest Coordinator for Paraguay	Asunción	USA	3	Coordination and technical assistance/training from WWF-US headquarters staff
WWF Atlantic Forest Coordinator for Paraguay	Asunción	Brazil	5	WWF Atlantic Forest team coordination meetings
WWF Atlantic Forest Coordinator for Paraguay	Asunción	Argentina	5	WWF Atlantic Forest team coordination meetings
WWF Atlantic Forest Coordinator for Paraguay	Asunción	Other country	1	Disseminate the Biodiversity Vision.
CICOAM trainers	Asunción	Brazil	4	To receive technical assistance to develop training in Paraguay in ecotourism
Other partners to be determined.	Asunción	Other locations in Latin America	4	Capacity building: To participate in training courses and seminars offered in these countries
Other partners to be determined	Asunción	USA and EU	3	Capacity building: To participate in training courses and seminars and to help WWF to leverage effort to consolidate the Biodiversity Vision.

Southwestern Amazon Ecoregion

Project Overview

Description of the Site

The humid forests of southwestern Amazon are widely known as one of the most biologically diverse and pristine areas remaining in the world today. The lowland forest and savanna transition zones of Peru, Bolivia and Brazil, comprise this important Southwestern Amazonian Moist Forests ecoregion (SWA) covering a surface area of more than 200,000 ha. High rainfall, soaring humidity, complex topography, soil types and meandering river systems have resulted in a mosaic of habitat and forest types, which in turn support highly diverse and abundant plant and animal communities. This ecoregion is home to endangered and endemic species including the jaguar, harpy eagle, the giant river otter, black caiman, white-lipped peccary and several species of macaws, guans and curassows. Although ninety-four percent of the ecoregion's original forested area remains forested today, there are large-scale threats that imperil this biodiversity, including opening and paving of roads, gold mining, oil/gas exploration and extraction, conversion of native forests to pastures for cattle ranching and agribusiness (soybeans and oil palm plantations). Immediate action is required to establish conservation areas under different schemes, including national parks, indigenous reserves, extractive reserves and independently certified forestry concessions.

The SWA Biodiversity Vision, developed by WWF, represents a powerful conservation planning tool for preserving these biological values in each of the ecoregion's "Landscape Units" (i.e. unique combinations of soil, climate and vegetation types) for the next 50 years. This Vision identifies three different conservation areas within the ecoregion:

- Level I: A network of current and potential protected areas (IUCN I – III)
 - Level II: A network of existing indigenous reserves and managed resources limited to traditional extractive practices (i.e. indigenous reserves and extractive reserves for the harvest of non-timber forest products).
- Level III: Areas managed for commercial extraction and sustainable forestry (i.e. Forest Stewardship Council) that maintains largely intact close canopy.

The SWA Biodiversity Vision has identified specific sites to implement these conservation schemes in Bolivia and Peru. These are:

In Bolivia:

The Amboró-Madidi Corridor (CAM): This is the most important connectivity complex of the three existing connectivity complexes of the Bolivian SWA (CAM, Manuripi-Federico Román and Iténez-Mamoré). The CAM, extending from Amboro National Park (in the south) to Madidi National Park (in the north), includes Amazonian rainforests (Pre-Andean Forest) as well as Andean Forest (Faja Subandina and Yungas) and part of Beni Savannas. The Biodiversity

Vision of the SWA only includes Amazonian forests below ca. 500 m. For this reason, only a fraction of each of the protected areas on the CAM are included in the general map of the Biodiversity Vision of the ecoregion. Nevertheless, the SWA vision, together with FAN's analysis that helped define the biogeographic limits of the complex, establish the importance of savannas and yungas forest to maintain ecological and evolutionary process due to their different levels of interrelations.

The Amboró-Madidi Corridor (the Andean foothill of the Bolivian Andes) is the area of greatest importance in terms of biodiversity in Bolivia. It is a string of national parks and indigenous reserves located along the eastern foothills of the Andes beginning with the Amboró National Park at the southern limit and extending Northwest to Madidi National Park. This corridor links up with the Tambopata-Candamo, Bahuaja-Sonene, and Manu protected areas in Peru. The Corridor includes approximately 4,000,000 hectares of protected areas and 600,000 hectares of indigenous reserves. Once in place, this Corridor will be a core area within the SW Amazon Ecoregion, currently including 2,845,420 ha. under strict protection (i.e. national parks) and 2,566,530 ha. under multiple-use protection (i.e. indigenous and extractive reserves). The protected areas are managed by the National Park Service (SERNAP) and in some cases, in conjunction with NGOs and indigenous groups.

Threats

Although this ecoregion is one of the least populated and consequently most biologically intact regions of the Amazon basin, anthropogenic pressures are growing and increasingly causing biodiversity loss. Habitat destruction, degradation and extraction of biological and other natural resources (i.e. oil gas and gold) increase the vulnerability of animal and plant populations and lead to the overall alteration of ecological processes.

The main threats in the ecoregion can be summarized as follows:

Habitat destruction: There is an increasing advance of the agriculture frontier (slash and burn agriculture) caused by population growth and migration of landless peasants (*colonos*) displaced from the highlands and other regions into the lowlands. After a few crop rotations, these sites are converted into low productivity pastures for extensive cattle ranching or into illegal coca fields for cocaine production. Deforestation and contamination of stream and rivers are common.

Contrary to what occurs in other areas within the ecoregion, the CAM, in Bolivia, is the most densely populated rural area in the country and in the SWA, this leading to even higher deforestation rates.

Resource Extraction: Unsustainable forest practices and illegal extraction of hardwoods (mahogany and cedar) as well as overharvesting of non-timber forest products (Brazil nut and heart of palms) all threaten the long-term viability of the forest. Illegal hunting and traffic of wildlife also imperils these ecosystems. These activities are usually associated with other economic activities such as the extraction of hardwoods and harvesting of Brazilian nuts, oil and gas exploration and extraction (Camisea in Peru & Carrasco and Catari in Bolivia) and gold mining activities in the Colorado River, Huaypetue area, Inambari and Malinowsky river

affecting the Madre de Dios basin. Gold mining represents one of the most serious threats to the Madre de Dios region, affecting the integrity of forests, water quality and the health of riparian and aquatic habits, fish species and humans.

Development and infrastructure: This includes road improvement (Chapare roads in Bolivia) and construction throughout the region (i.e.: Trinidad-Villa Tunari in Bolivia and Shintuya – Itahuanía - Madre de Dios – Iberia – Iñapari that will later connect Peru to Acre in Brazil). Of particular importance are the trans-boundary roads linking Brazil to the Peruvian and Bolivian Amazon. Other threats include pipeline constructions for the extraction of oil and gas as well as the construction and enlargement of dams (i.e.: at Madidi and Tahuamanu) or unsustainable eco-tourism, such as along the Tambopata River and within the Manu National Park (Peru) and Villa Tunari and Rurrenabaque (Bolivia).

The development and improvement of the electricity transmission network could also have significant negative effects on deforestation in the CAM as new transmission lines are planned to be built from Carrasco (Cochabamba) to Urubó (Santa Cruz).

In the case of the Amboró – Madidi Corridor (CAM), in Bolivia, all of the above mentioned threats are present in a more complicated way: a) it is the most densely populated rural area of the country, b) it is transversed by the most developed highway network, c) location of most of the oil concessions and thus, potential new development of hydrocarbons explorations, d) area where all of the coca plantations exist, e) destination of the main influx of migration from the highlands, and thus, the latter having an enormous social and political complexity.

The Biodiversity Vision for the SWA was elaborated based on this threat analysis and biodiversity representation. This vision contemplates: certified forest management (for timber and non timber products) as a form to reduce the effects of forestry activities on the forest; at the same time it is expected that certified forest management will add value to the forest and help avoid land use changes. WWF is elaborating a strategy in order to reduce the oil activity effects. In this way, WWF's ecoregional focus seeks ways to mitigate transborder threats.

FY 02 Accomplishments

In Bolivia:

During FY '02, the following was accomplished in the Amboró-Madidi Corridor:

- * As a pilot project, PROCESO (an NGO based in Santa Cruz) concluded the first phase of training local actors in two areas of the Amboró-Madidi Connectivity Complex (ANMI Apolobamba area and Amboró National Park). The method applied was that of training of trainers (environmental promoters) with different organizational structures (municipalities, vigilance committees and organizations).
- * The surveys to obtain data on biological and socio-economic aspects have been concluded by CETEFOR in the Altamachi-Covendo-Cotacajes area. These biological surveys have only been concluded in three other sampling places into the CAM: Ichilo River, Pilon Lajas Reserve and Carrasco National Park.

- * The Vegetation map was concluded by CISTEL.
- * Both CETEFOR and CIDEDER elaborated a proposal for the creation of the Altamachi Protected Area, which was approved by Prefectural Resolution (232/02) of the Prefecture of Cochabamba.
- * CIDEDER has redirected the attention of The Nature Conservancy and Conservation International in order to seek their support for land tenure clarification work in the Altamachi Protected Area and to start with the elaboration of the management plan.
- * 30 parkguards of the lowland protected areas of the country were trained under SERNAP's training modules.

Project Activities

LWA (USAID/WWF) funding in Bolivia will provide assistance for the development and partial Implementation of the Biodiversity Vision into the CAM by selecting a pilot area in which a working group will be established in order to develop the pilot area conservation plan. A technical advisory committee for the CAM will be created so as to generate a forum for discussion as well and its advice will be useful for the definition of monitoring variables at the general (CAM) level. The initial implementation of the newly created area, Altamachi, will be supported as well.

Total level of Effort: \$315,000 (\$259,000 USAID -\$50,000 Bolivia Mission and \$215,000 EGAT-; \$50,000 WWF Match)

Objective I: Consolidation of Amboró-Madidi Corridor

Objective I total level of Effort: \$195,000 (USAID)

As previously stated, in Bolivia the area with the highest biodiversity and endemism rates is located within the area proposed for the planning and establishment of the Amboró – Madidi Corridor. This area entirely overlaps with one of the most important areas for hydrocarbons as well as with the most densely populated rural region in the country. The above mentioned characteristics make it necessary to develop a long-term biodiversity conservation perspective for the area and, at the same time, that this perspective become a tool for municipal, regional and national planning in close coordination with local stakeholders.

Because of limited financial resources and in order to obtain as much local participation as possible, conservation planning within the framework of this proposal will be confined to a pilot area. This pilot experience, however, will be systematized into a series of lessons learned so they can be useful for working –and improving them- in other areas within the Corridor when additional resources are made available. On the other hand, it is very important to establish a coordination mechanism among all interested conservation entities, GO and NGO, for which a technical advisory committee will be created. Among other things, this committee will be useful for the definition of wide-range, small-budget monitoring variables at the general (CAM) level.

The initial implementation of the newly created area, Altamachi, will be supported as well, thus giving place to its subsequent effective management.

In the coming year (FY03), the proposed activities are as follows:

- WWF will establish a coordination unit among conservation entities working in the area (Technical Advisory Committee).
- FAN (Santa Cruz), CISTEL (Cochabamba) and Instituto de Ecología (La Paz) will finish developing the conservation vision for the Corridor, taking advantage of the new information available. The area for the pilot conservation plan will be selected.
- FAN and CEPAD will conform a working group within a selected “Mancomunidad” to obtain a pilot conservation plan for this specific pilot-area.
 - CIDEDER and the Cochabamba Prefecture will initiate the Joint management of Altamachi Protected Area.
 - CISTEL will continue to prepare a multi-temporal analysis in specific areas and on a small scale in order to introduce this data into the Monitoring System.
 - A consultant will work together with the Technical Advisory Committee to select a set of variables for the monitoring system.

Activity 1.1: Establishment of Local Participation for the Pilot Area and Technical Advisory Committee for the CAM

WWF will support the conformation of a Technical Advisory Committee for the CAM. This is considered important by both the funding entities as well as the organizations that are working in the CAM. The term of reference for the "Technical Advisory Committee" will be defined as a result of discussions based on a draft proposal presented by WWF. This committee should turn into the forum for coordinating and complementing various activities within the CAM as well as to avoid duplication of efforts and promote complementary actions and matching funds. As much as possible, this committee will try to be the speaking voice of the NGO and Government community of the CAM in those issues where there is overall consensus. The committee should become the body for helping resolve different conflicts on natural resources and a consultation source for consultation and advice to the government and multi or bilateral organizations of the CAM. An opportunity for discussion will be established regarding global aspects of the CAM including, for example, a monitoring system. The new "Technical Advisory Committee" would include SERNAP, the General Direction for Biodiversity, "Ordenamiento Territorial", WCS, CI, CARE, TNC, Bolhispana and WWF, because they are working in the CAM and having covered important areas with conservation activities in spite of limited funding.

For the functioning of the Committee, WWF will financially support the hiring of a person that will be responsible for articulating and co-ordinating the "Technical Advisory Committee" and the workshops of the Committee. The consultant could play the role of co-ordinator or facilitator for the Committee. The consultant hired by WWF could be associated with a governmental entity such as SERNAP, DGB, and OT or vice ministry so that their capacity to convoke is more effective.

After the biodiversity conservation vision is obtained for the CAM, a pilot area will be selected for the elaboration of the conservation plan, FAN and CEPAD, will organise a participatory instance (like a working group) for a “Mancomunidad” (municipalities association) of municipalities to be selected and included into the pilot planning zone within the CAM (there are 6 “mancomunidades” established in the CAM one of which will be selected). This working group is necessary to facilitate the communication between the technical personnel and local actors allowing for consultation with local stakeholders regarding the decisions taken regarding the conservation actions included in the plan. This participatory process will facilitate the incorporation of the plan (vision, conservation actions and strategies) for the biodiversity conservation of the CAM into the municipal planning. This pilot planning experience will be a novelty among the municipalities of the CAM and will generate a good deal of expectation in other municipalities for which additional funding will be needed. It is expected that a model for planning will arise that will be appealing for fundraising endeavours, both for the implementation of the first group of municipalities selected as well as for other “mancomunidades” or association of municipalities in the future.

Once the working group is fully organised, its members will be exposed to alternatives for natural resource planning using practices not previously known or considered by them. They will receive transfer of knowledge and skills on sustainable management of natural resources gained through an informal educational setting –workshops, exposure to new endeavours such as ecotourism, forestry management, FSC certification, and others. The working group will be based within one of the selected communities of the “mancomunidad” and of the pilot area. It will also include local stakeholders such as representatives of the municipalities and members of the management committees of the protected areas.

Anticipated Outputs/Results for Activity 1.1:

1. The Technical Advisory Committee is conformed and has the summoning capacity needed to convoke and hold meetings and to coordinate actions as required.
2. The local actors from the pilot area of the CAM are organized and trained in order to participate on the definition of conservation actions into the pilot area.
3. The local people from the selected “Mancomunidad” or association of municipalities included in the pilot area are actively participating and following the planning process

Level of Effort for Activity 1.1:

Level of Effort: \$65,000 (USAID)

Activity 1.2: Continuation of the Amboró-Madidi Corridor Design

During FY01 and FY02, FAN, CISTEL and the Centro de Genética y Biodiversidad generated new information, such as a vegetation map, a Digital Elevation Model (DEM, altitudinal map), and have also collected information from gaps of biological information (Northwest of Madidi National Park, Altamachi-Covendo-Cotacajes, TIPNIS, Carrasco and Amboró National Parks core area, Pilon Lajas Reserve core area, Yuqui's and Yuracare's TCOs, Ichilo River). The taxa collected in flora was Orchidaceae, Bromeliaceae, Cactaceae (epiphytes only) and Passifloraceae; as well as for birds, amphibians and mammals (Marsupialia and Rodentia) in fauna.

FAN and two other academic institutions will work on the elaboration of the biodiversity conservation vision for the CAM. Vegetation maps and species distributions will be used for this work that needs to address the following conservation biology principles: Representation of habitats, connectivity and large forest blocks. Included will be the analysis of newly obtained information and systematizing information belonging to other institutions. A gap analysis considering representativity, the maintenance of ecological and evolutionary processes, global changes and others, will be carried out in order to prioritize areas for conservation. WWF-US and Bolivia will work with FAN, CISTEL and Ecology Institute (EI) on the conceptual and methodological issues of this analysis. The participation of the SWA Senior Program Officer is expected in the Corridor Design meetings to be held in Cochabamba.

During FY03, the following information will be gathered or generated:

- The biodiversity surveys to collect information were initiated in FY02 and they will be completed by October 30th, for the 8 prioritized areas (Northwest of Madidi National Park, the Tacana Indigenous Territory (TCO), Beni River, Altamachi-Covendo-Cotacajes, TIPNIS, Carrasco and Amboró National Parks core area, Pilon Lajas Reserve core area, Yuqui's and Yuracare's TCOs, Ichilo River). The taxa that will be collected in flora are Orchidaceae, Bromeliaceae, Cactaceae (epiphytes only) and Passifloraceae; as well as for birds, amphibians and mammals (Marsupialia and Rodentia) in fauna. These surveys are currently being implemented by CISTEL and the Centro de Biodiversidad y Genética, both of which are institutes under the Universidad Mayor de San Simón, the state university in the Cochabamba Department, that have an important experience in this field of work. The information on taxa will not be utilized as biodiversity indicators but instead to extrapolate information for the areas that are lacking biological data in relation to the vegetation map.
- After concluding the gathering phase of biological information, the elaboration of the biodiversity vision for the CAM will be initiated by a team of experts including FAN and other academic institutions (CISTEL and Institute of Ecology). A vision for the conservation landscape in the CAM will be constructed from the GAP analysis (with some variations resulting from the extrapolations based on the grid squares). The other institutions will improve FAN GIS capacities and databases on biodiversity by working together.

- Once the biodiversity conservation vision is obtained, a pilot area will be selected for the elaboration of detailed conservation actions with local stakeholders, which will conform a working group as described in 1.1. With these actions, the Pilot conservation plan for a portion of the CAM will be concluded.

The conservation plan requires different sequential steps:

- a. Current diagnosis of the biodiversity conservation status of the CAM.
- b. Analysis regarding the opportunities and risks for the biodiversity conservation.
- c. Biodiversity Vision (what is desired from a long-term biological o conservation perspective).
- d. Socialization of information with local actors
- e. Ensuring compatability between the vision and the development expectations
- f. Prioritization of lines of conservation actions and strategies for each polygon within vision ensuring compatibility with the development expectations

Letters a, b, and c are strictly technical based on the information collected (biological and socio-economic) for the CAM. Letters d, e and f will only be carried out for the pilot area which will require the participation of the local people so that together the lines of conservation actions and strategies can be established.

Anticipated Outputs/Results for Activity 1.2:

1. Biological information gathered, ecological valorisation concluded
2. Analysis of biological and socio-economic data concluded enabling the completion of the biodiversity conservation vision.
3. A pilot area is selected and a conservation plan is elaborated.
4. Database is organized and updated in the Geographic Information System (GIS). The database and GIS system (with metadata) will be available on a CD-ROM for use by SERNAP/DGB and others.

Level of Effort for Activity 1.2:

Level of Effort: \$81,000 (USAID)

Activity 1.3: Continuation of the Biodiversity Monitoring and Evaluation System Design

The Monitoring and Evaluation System was developed in FY00 by FAN. The design of the system will be reviewed by the Technical Advisory Committee, during the several workshops for the discussion and analysis of the ongoing monitoring systems and to agree on the variables to be monitored at a large scale range and with the lowest financial investment possible. CISTEL is

concluding a multi-temporal analysis of forest cover and land use change for the CAM and for specific areas with more resolution within it. The Monitoring and Evaluation System recommends as variables the monitoring of deforestation and changes in land use. The multi-temporal analysis will be the base line for the variables of deforestation and intensity of land use changes. This means that the year 2001 will be considered as the starting point to see how the landscape has been modified and the intensity of land use changes in relation to previous years. This variable provides the opportunity of monitoring without significant investment of time and money yet covers the entire CAM and with more intensity the more fragile points.

Anticipated Outputs/Results for Activity 1.3:

1. Baseline data for the M&E system enriched with new data.
2. Forest cover baseline was established using satellite images for specific areas with high levels of land use change. This information will be integrated into the M&E system and used to monitor deforestation.

Level of effort for Activity 1.3:

Level of Effort: \$49,000 (USAID)

Objective II: Effective Management of Existing Protected Areas

Objective II total level of Effort: \$ 120,000 (\$70,000 USAID; \$50,000 WWF Match)

Activity 2.1: Supporting the Initial Implementation and Effective Management of the Altamachi National Park and Natural Integrated Management Area.

CETEFOR-CIDEDER concluded the biodiversity and socio-economic surveys as well as the social consultation needed in Bolivia for proposing the creation of a new protected area. The Cochabamba Departmental Council and the Prefecture of Cochabamba then approved the proposal (Prefectural Resolution # 132/02) and officially established the Protected Area Altamachi, comprising two categories: Departmental Park (505,451 ha) and Natural Integrated Management Area (151,070 ha).

WWF-BPO will provide technical and financial assistance to develop the management plan for the Altamachi National Park and Natural Integrated Management Area. This plan is intended to steer management and planning efforts within the protected area in as strategic and effective a manner as possible by outlining the goals, objectives, strategies and specific activities necessary in the short and medium term. The document will be developed jointly between CIDEDER, the Cochabamba Prefecture, SERNAP and local communities.

WWF-BPO will provide financial and technical assistance to hire and supervise the Altamachi protected area personnel. These staff members will be responsible for carrying out a series of activities that will help abate threats to biodiversity, promote community-based conservation and

strengthen law enforcement. Additionally, they will provide patrolling, posting signs as well as activities related to confiscation of illegal timber, flora and fauna.

Anticipated Outputs/Results for Activity 2.1:

1. Altamachi National Park and Natural Integrated Management Area's initial management plan officially approved by SERNAP and Prefecture of Cochabamba.
2. Altamachi Protected area begins its implementation and hires personnel.
3. The elaboration of the management plan is initiated.
4. Posting of signs at strategic points throughout the area
5. Improved patrolling, confiscation and presence at control posts.
6. Local Management Committee conformed and communities are strengthened.

Level of Effort for Activity 2.1:

Level of Effort: \$120,000 (\$70,000 USAID; \$50,000 WWF Match)

List of Key Staff Involved:In Bolivia

- WWF-BPO
 - o Roger Landivar (Country Representative)
 - o Adolfo Moreno (Conservation Director)
 - o Henry Campero (Coordinator in Bolivia for the SWA Ecoregion)
 - o Claudia Saavedra (Contracts Officer)
 - o Wilber Diaz (Assistant Accountant)
- CIDEDER
 - o Hans Rocha (Team Leader)
 - o Miguel Cardozo
- CEPAD
 - o Carlos Hugo Molina (Team Leader)
- PROCESO
 - o Teresa Valderrama (Team Leader)
- CISTEL
 - o Wilma Crespo (Team Leader)
 - o Wanderley Ferreira
- FAN

- Natalia Araujo (Team Leader)
- SERNAP
- Sergio Eguino (Planning and Monitoring Director).

Other Specific Program Details

Financial Sustainability

WWF BPO is part of an institutional effort to raise funds for implementing part of the biodiversity conservation vision in the SWA which, when concluded, will benefit some areas of the CAM. A more specific fundraising campaign, however, will be initiated once the biodiversity conservation vision is concluded for the CAM and the pilot area selected.

Partially due to WWF's intervention and presence in some of the areas within the CAM, such as Altamachi, other international conservation NGOs such as TNC and CI have decided to join and participate in the effort.

Travel

Bolivia

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
SWA Coordinator in Bolivia – Henry Campero	Santa Cruz, Bolivia	Lima, Peru	1	
SWA Coordinator in Bolivia – Henry Campero	Santa Cruz, Bolivia	Brasilia, Brazil	1	

Bering Sea Ecoregion

Project Overview

Description of site

The Bering Sea is one of the richest and most diverse sub-polar and polar marine ecosystems in the world. Much of the Seas diversity can be attributed to the contours of the ocean floor and the wide variety of habitats found across the continental shelf. At the convergence of the sea basin and outer shelf production of zooplankton and phytoplankton is exceptionally high, providing the basis of the rich food web in the Bering Sea. The currents in the Bering Sea create significant upwelling in which nutrients from the ocean bottom are carried upwards, enriching the surface layers of the water.

This diverse complex of marine ecosystems is an important habitat for over 400 species of fish, crustaceans, and mollusks, fifty species of birds and twenty-five species of marine mammals. More than 15 whale and other cetacean species migrate through the Bering Sea as a summer and fall feeding ground or use it as a wintering area for several months each year. These include the endangered bowhead whale and northern right whale, as well as the bearded seal, the ribbon seal and the polar bear.

Significant for more than just its rich marine biodiversity, the Bering Sea is tremendously important for the economies of the US and Russia. More than half of U.S. and Russian seafood production comes from the Bering Sea valued at more than \$1 billion annually in the U.S. alone. The Bristol Bay salmon fishery is the single largest salmon fishery in North America, providing a livelihood for fishermen from Alaska and throughout the northwest.

The region is no less rich in cultural heritage. Many communities of Yupik, Aleut, and Inupiat, Chuckchi, Kamchadal, Koryak, and other peoples inhabit the Bering Seas western and eastern shores. Their livelihoods have been closely tied to the sea and its resources for thousands of years. Many Bering Sea villages continue to rely heavily upon marine resources. Subsistence harvesting of whales, walrus, fish, and other wildlife continues to provide a valued food source; the practices associated with such harvests help to unify and strengthen communities by reinforcing age-old traditions and cultural values. The future of the Bering Seas rich biological heritage is inherently linked to these communities.

Threats

Dramatic changes to the Bering Sea in 1998 are merely the latest chapter in a decades-long disruption of the ecosystem and its inhabitants. Among the recorded happenings during calendar year 1998:

- The sea surface temperatures were the warmest ever recorded;

- The largest bloom of coccolithophore algae ever recorded in the Bering Sea appeared and re-appeared throughout the summer;
- Almost 200,000 short-tailed shearwaters, approximately ten per cent of the regions population, died, apparently of starvation. The birds that remained were lighter in weight than they had been a year earlier;
- On the Pribilof Islands, up to 15 per cent of the female population of northern fur seals were afflicted with a fungal infection of a kind never before recorded in Alaska.

These changes, and others witnessed in the Bering Sea since the 1970s, are attributed to a combination of climate change and over-harvesting of fish and predators.

The mid-1970s witnessed what scientists refer to as a "regime shift" in which the ecosystem changed into one dominated by so-called "trash fish" such as Pollock. This regime shift coincided with a sharp increase in sea surface temperatures.

More recently, a decline of up to 80 per cent in the western stock of Steller sea lions and some populations of harbor seals has been noted. In addition, as a result of pinniped declines, orcas in the regions were preying on sea otters. This has led to declines in sea otter populations and consequent increases in the otter's sea urchin prey, which in turn are causing serious deforestation of kelp beds.

Key threats from poor fisheries practices include over-harvesting, excessive waste of non-target species and the destruction of ocean bottom habitat by trawling. The effects of global warming are already evident in the gradual reduction of the ice edge, a migrating ecosystem which is critical to many Bering Sea species, from plankton to whales to people. The presence of heavy metals and other contaminants in wildlife tissues is an alarming sign of toxic contamination -- most likely originating from sources far from the Bering Sea.

There are continuing concerns about the large number of factory trawlers in the Bering region and the unsustainability of their intense fisheries. The US Bering Sea fleet of factory trawlers has quintupled since the mid-1980s, and it is believed that there are increasing numbers on the Russian side, exacerbated by weak enforcement of regulations. These boats chase Pollock, the most valuable fishery off Alaska and the largest fishery in the country. Trawlers are responsible for about half the annual catches of Pollock. Indications are that the Russian fleet is currently being upgraded and quotas increased, meaning further pressure on existing stocks in the near future.

Commercial fishing also affects marine life through the (purposeful or accidental) disposal of processing waste, plastics and other debris, and oil spilled during accidents. The two most likely explanations of the northern fur seal decline are (1) entanglement of fur seals in nets, packing gear, and other debris and (2) commercial over-fishing of the fur seals food base.

Other threats in the neighboring Seas of Okhotsk and Japan, which could affect the Bering Sea, include offshore oil and gas development around Sakhalin Island, the largest foreign investment in any enterprise in the Russian Far East, and illegal dumping of waste.

FY02 accomplishments

The following implementation plan builds on the foundation of programs, contacts, and information garnered by WWF in the previous three years in the Bering Sea ecoregion. Highlights in the most recent year, FY 02 include:

- Building capacity in environmental educational programs in Bering Sea, exemplified in the creation of Living Planet Clubs in Lavrentia and Pevek (Chukotka), continuation of similar programs in Anadyr and Provideniya (also Chukotka); a new chapter on the Commander Islands;
- Strengthening ties among educators on both sides of the Bering Sea, notably through our first international workshop for Living Planet Club coordinators in Anchorage, in October 2001.
- Active public outreach efforts by the Russia Program Office to “advertise” the importance of the Bering Sea. Examples include: a Chukotka photo exhibit in Moscow; Bering Sea ecoregion feature stories in two issues of Aeroflot International’s in-flight magazine; active use of WWF-Russia’s web site.
- Establishment of marine conservation zone off the coast of Nalychevo Nature Park through an agreement between the parks administration and the fisheries management agency); In the Pribilof Islands (Alaska), WWF continues to build community support to establish marine conservation zone. Outreach efforts include a workshop in February (02) on marine reserves; two site visits (including community meetings, visiting w/fishermen, village leaders and others), and publication of newsletter on ecoregion our work.
- Leveraging new sources of support from private funds, such as the Trust for Mutual Understanding, Oak and Packard Foundations and government funds such as the National Park Service’s Beringia Conservation Program.

In FY 2003, WWF will continue to expand upon these achievements. We will focus on supporting existing programs, rather than initiating any new projects. In Chukotka, we will concentrate efforts on building support from the local government for our educational programs; promoting establishment of Beringia National Park; and monitoring potential coastal and offshore oil development.

In Kamchatka, we will support our educational programs and provide opportunities for the remote Commander Islands’ local school children and teachers to join our Bering Sea educational efforts. Also we will renew our commitment to improving fisheries enforcement in the western Bering Sea, and will monitor the effectiveness of new protection of Nalychevo Nature Park. While political obstacles have all but stopped our work in Karaginsky Bay, we will continue to maintain contacts and work with regional Koryak leaders, monitoring the upcoming elections in the Karaginsky District for new windows of opportunity in collaboration.

On the Alaskan coast, we will continue our community-based efforts in the Pribilof Islands to create a habitat conservation zone -- one which protects the abundant fur seal populations and seabirds, as well as the halibut fishery upon which many local families depend for a living. Additionally, we will maintain our current educational programs through the Living Planet Club while searching for funds to expand it.

Project Activities

Total level of Effort: \$218,857 (\$102,000 USAID, \$116,857 WWF)

Objective I: Protect key sites in the Bering Sea by establishing three new protected areas and enhancing management in two existing areas

Level of effort for Objective I: \$29,250 (USAID)

Activity 1.1: Establishment of a Coastal Protected Area in Karaginsky District

During the last year and a half, WWF-Russia (primarily via a hired consultant familiar with northern Kamchatka) developed a concept for a coastal protected area and conducted outreach among many local officials to build support for the idea. After gaining support from many local leaders, WWF was pleasantly surprised to hear that Koryakia's Governor Loginov -- typically a pro-mining, anti-environmental leader -- also endorsed the idea. However, by this time, the head of Karaginsky District rejected the proposal and without his support, a protected area will be impossible to establish.

Thus, in this project, WWF will monitor the political situation, and, having prepared the baseline information needed for the proposal will be prepared to act quickly in the event of changing circumstances. In the interim, WWF-Russia will expend efforts in other areas where collaboration with local organisations offers more promise.

Level of effort for Activity 1.1:

Please note this activity is being carried over from FY02. The level of effort is not included as this activity is funded with FY02 funds. Please see approved FY02 implementation plan for full details.

Anticipated Outputs/Results for Activity 1.1:

- In December 02, update on political situation in Karaginsky District
- Depending on above, recommendations on next steps for PA creation

Activity 1.2: Beringia Ethnic Cultural Park and coastal protected areas in Chukotka Region

In this project, WWF will continue activity which it began in the first phase (FY 2000-2001) of the program, which focused on environmental education in the young regional park. In the second phase (FY 2002) provided professional consultation support to the park to a) enhance its status as a protected area and b) strengthen its public outreach program. Additionally, in the past year, WWF established an active network of contacts in Moscow and Anadyr – from high-level officials from the governor's administration to local individuals interested in promoting the park.

Some activities proposed in FY 02 were not completed, such as training future park rangers and expansion of coastal refuges on the Anadyr coast. This was in no part due to an inactive staff or lack of effort, but rather due to an over-ambitious plan, insufficient capacity in the region, and political unreadiness to begin such activities in advance of the park's creation. In the following year, we will continue to work on achieving the goals set for FY 02, but will set a longer time-period for those activities. In the FY 03 plan we will focus on producing only a few outcomes which are quite challenging in and of themselves to achieve.

In the next year (FY 03), WWF will hire a consultant to actively promote the creation of a Beringia National Park. Having reviewed a large and comprehensive proposal that was prepared ten years ago, WWF staff and its consultant will work with regional officials, native organizations, reindeer herders, whaling communities, and other partners to create a new zoning plan to include areas for traditional use, recreation, strict conservation, and other zoning categories. The consultant will prepare all necessary paperwork, glean signatures from necessary officials, and hand off package to WWF in Moscow for further promotion.

On a summer (August 02) visit to Anadyr and Provideniya the WWF team was unable to learn definitively about whether, indeed, the company SibNeft plans to exploit oil deposits in the coastal region of Anadyr Bay, one of the high priority conservation areas described in the WWF Bering Sea biodiversity assessment. Although some environmentalists say that Sibneft has already violated environmental laws by entering coastal wetland preserves, WWF-Russia has not yet confirmed this allegation. While maintaining a dialog with Sibneft and its president, the Governor of Chukotka, WWF Russia is treading carefully in this difficult political terrain. To better understand the issue, as well as the biodiversity at stake along the coast, WWF will collect biological information on the coastal preserves and prepare a short description of these areas. Furthermore, WWF will invite participation of its Norway-based Arctic Program in analyzing the situation and, in the event of findings of oil development activity, provide technical advice to WWF-Russia on how to monitor the development.

Level of effort for Activity 1.2:

\$27,000 (USAID)

Anticipated Outputs/Results for Activity 1.2 :

1. Brief profiles on biodiversity harbored in coastal preserves Avtotkul, Tundrovyy and Tumansky Zakazniks. Report should include not only species names (common and Latin); but detailed map and analytical, up to date information on threats.
2. In Russian and English: assessment of oil development: current status, possible future direction.
3. Preparation of full set of documents, zoning plan, with full set of necessary signatures from regional officials for submission to federal level.

Activity 1.3: Development of Kommandorsky Zapovednik

In this section we will continue to develop our program in the Commander Islands, a sort of western analog of Alaska's Pribilof Islands. The Commander Islands is already designated as protected – indeed, it is one of Russia's largest marine protected areas. Rich in marine mammal, seabird, and fisheries productivity, the Commanders are still threatened by poor management; overfishing by Russian and other fleets; drift netting, primarily by Japanese fleets; and stark poverty of the local Aleut community, which essentially forces them to become poachers of the marine life.

WWF's provision of technical assistance to the reserve (proposed in last year's implementation plan) has been delayed, due to the lack of personnel in the Commander Islands Nature Reserve. Specifically, without a director or deputy in place to account for the expenditure of funds and responsible use of equipment, WWF decided to postpone this type of contribution to the nature reserve. Based on WWF's conversations and interviews with local officials in Kamchatka in early September, we think that in the near future, a new director will be designated and we can proceed with last year's plan. Thus, we will include that point in the outputs but will not dedicate any further funds to it.

On a more hopeful note, our program in environmental education thrived last year and we will continue to support the new Living Planet Club in Nikolskoe Village this year. WWF will provide funds for a local teacher and several students to travel to the "mainland" (Kamchatka Peninsula) to participate in an annual "Ecological Marathon" (academic competition focusing) for school children. Additionally, in October 2002, with funds from a separate donor we will bring a local schoolteacher to Anchorage to attend the National Park Service's "Beringia Days" conference and to participate in a WWF "Living Planet Club" educators' workshop. In the summer of 2003, WWF's Commander Islands will conduct a summer camp for school-aged children involving nature studies, outdoor activities, and other educational activities related to conservation.

Note: as part of our matching effort, WWF has attracted private funds to improve management of the Commander Islands, as well as increase inter-agency cooperation in enforcement around

the Commanders. Thus, although our work on the Commanders is not limited to education, for the purposes of USAID expenditures, our “outcomes” reflect the education work.

Level of effort for Activity 1.3:

\$2,250 (USAID)

Anticipated Outputs/Results for Activity 1.3:

1. The Living Planet Club in Nikolskoe village conducts a second year of activities in the local school.
2. Participation by five school children and one teacher from Commander Islands in the "Global 200" Ecological Marathon in Petropavlovsk-Kamchatsky (November 2002)
3. Participation by 15 school children in the WWF Summer ecological camp (July-August 2003)
4. Management and enforcement capacity strengthened in Commandorsky Zapovedniks when rangers' department receives three new radio communication equipment (March 2002)

List of key staff involved under Objective I:

- Viktor Nikiforov, WWF Russia Program Office: Regional Program Director
- Anisia Shepeleva Arctic, WWF Russia Program Office: Projects Coordinator
- Consultants and Grantees: Vladimir Kiprianov, others

Objective II: Shape the development policies for improved stewardship in collaboration with local communities, the private sector and the Russian Government

Level of effort for Objective II: \$183,091 (\$66,234 USAID, \$116,857 WWF)

Under this objective, we will concentrate particular effort in environmental education. Additionally, in the fisheries sector, we will continue to work on improving fisheries enforcement, as well as fisheries management, by renewing our program in satellite vessel monitoring system and pursuing our work in fisheries certification.

Activity 2.1: Creation the network of the “Living Planet” Clubs in Chukota

Introduction/Justification:

Objective One highlights the importance of protecting key sites within the Bering Sea ecoregion. The sites are Nalychevo Park, Karaginsky Bay, the Commander Islands, and several coastal areas in Chukotka. Rather than being focused on promoting particular site-based work, our

educational program is being designed primarily to achieve broad, long-term goals. We are developing the “Living Planet” Club and other educational activities in such a way as to develop a broad base of support for these protected areas, as well as for conservation in the entire ecoregion.

While our main audience is school-aged children, we must also work with academic institutions and administrations to build their support for our program. For example, our staff in Russia works with the regional schools administration, libraries, children’s community centers (*Dvzorets Tvorchesta*)

One of the primary challenges in the area is capacity. It is extremely difficult to find, and train, individuals who are willing to and capable of implementing a program plan, reporting on it and who are available to working with children year-round. With regular communication, training support and encouragement of individuals who demonstrate an enterprising spirit as well as professional qualifications, we feel we can build up a cadre of solid educational partners. Although it takes time, if we can do, these people and their students will carry the program into new places and for years into the future, hopefully, independent of WWF support.

General Project Description

In FY 2001, WWF created youth educational clubs in Provideniya, Anadyr and two villages in Alaska. The clubs are a venue for teaching science and stewardship in a fun yet structured environment. When joining, children learn about WWF and its international membership of 5 million, as well as the other international conservation agendas on which WWF works. Thus, participation in the Living Planet Clubs also helps to show Russian children how their actions are linked to the entire ecoregion, and to the world around them. In FY 02, new clubs were created in Bilibino, Pevek, and Lavrentia and an additional club was formed in Alaska.

WWF works with the school system and the local Community Centers (in some places known as *Dom Kulturi*, or House of Culture, in Russian. In other places, such as Anadyr, the Children’s Library is a major community center) to establish the Living Planet Club chapters in such a way as to complement ongoing activities. The activities under this project include renting a classroom to be devoted to the purpose of the club; furnishing the classroom with educational materials; computer internet access; a stipend for Living Planet Club coordinators. The young children, “Rangers of the Living Planet,” receive T-shirts, caps and other souvenirs, when they join.

During the school year, through after-school programs and special events, children will learn about the Bering Sea environment and will have outdoor camping and learning experiences in the summer. In at least four locations, WWF will support summer weeklong science camps.

In FY 2003, WWF will work to unite the Living Planet Club coordinators through training activities and email communication as well as through a joint program in which children will exchange information and artifacts with their young counterparts across the sea. With separate funding, we will invite eight educators (club coordinators) from the Bering Sea to Anchorage to participate in a US National Park Service “Beringia Days” conference and a WWF-organized training workshop. The workshop will kick off our “Trunks Across the Sea” program, in which

teachers and kids will prepare trunks of artifacts, art, literature (authored by kids). We will support an all-Russian training and coordination seminar in Moscow, and will sponsor a calendar contest, soliciting drawings this year from around the Bering Sea ecoregion – both Russian and US coasts -- through the Living Planet Clubs.

Level of effort for Activity 2.1:

\$49,095 (\$41,484 USAID, \$7,611 WWF)

Anticipated Outputs/Results for Activity 2.1:

1. Eight Living Planet Club coordinators and two WWF Russia staff participate in international conference “Beringia Days,” and obtain new skills, methodologies in youth education initiatives through the WWF educators’ workshop - October, 2002
2. A training seminar in Moscow is held for 20 educational coordinators throughout Russia (a small portion only of USAID funds will be used to cover three Bering Sea coordinators’ travel to Moscow) – spring, 2003
3. An “Ecological Marathon” involving students’ study, celebration, and competition based on their knowledge of Global 200 Ecoregions, includes a team of one teacher and 4-5 students from the Commander Islands.
4. More than 100 schoolchildren from Chukotka, Kamchatka, and Commander Islands participate in WWF’s summer ecological camps (July-August 2003).
5. Living Planet Clubs established in two communities in the Bering Sea ecoregion, Bilibino and Lavrentia (November 2001). About 40 kids (12-16 years old) will start to study in the new WWF ecological clubs.
6. A Bering Sea calendar is published, with artwork from children representing communities and cultures throughout the Bering Sea (November, 2003)

Activity 2.2: Laying the groundwork for certification/economic incentives for fisheries conservation

This project, funded in FY 02, was designed to explore opportunities for marine certification in the western Bering Sea. Due to undercapacity in the Russia Program Office and Bering Sea programs, the proposed activities are much delayed and will be included in objectives for FY 03, but no new resources will be devoted to them.

Level of effort for Activity 2.2:

\$32,746 (\$2,250 USAID, \$30,496 WWF)

(Delayed) Outputs/Results for Activity 2.2

1. Publishing an MSC brochure and leaflets in Russian
2. Hold a meeting on MSC certification with government authorities.
3. Beginning the process of MSC certification in Russia.

List of key staff involved under Objective II:

- Margaret Williams, Bering Sea Director;
- Viktor Nikiforov, Director of Regional Programs, WWF-Russia;
- Vasiliy Spiridonov, Marine Program Coordinator;
- Anisia Shepleleva Coordinator of the Arctic projects
- Sub-grantees/project executants include:
- Vladimir Sertun, Ludmila Romanova, Natalia Levaya, others (Living Planet Club coordinators)
- Other grantees and consultants to be selected.

Activity 2.3 Improving Enforcement in Western Bering Sea through Satellite-based Vessel Monitoring System.

One of the greatest threats to Bering Sea biodiversity is fisheries mismanagement in the Russian federation, where high levels of corruption and illegal fishing occur on a massive scale. According to a recent report by TRAFFIC (commissioned by WWF), in the western Bering Sea quotas are exceeded by 50-150 percent, resulting in economic losses of up to \$4 billion. Inadequate enforcement due to insufficient technical and professional capacity in some agencies and poor coordination among relevant agencies, is a major factor leading to these illegal activities. A lack of transparency and public involvement in fisheries management characterize the federal fisheries management arena, adding a new layer of complexity to addressing fisheries and marine biodiversity conservation.

To combat these problems, WWF seeks to improve fisheries management and link our management initiatives to our marine protected area work. Since the creation of MPAs will be not be enough to preserve the special features of the ecoregion, addressing other major threats to Bering Sea biodiversity (one of the most important of which is Russian fisheries mismanagement), will also be essential to our long-term success. Our activities for this USAID project will focus on a project previously initiated with USAID Funds. Although we were able to attract new, private funds for this work, they are inadequate for the program. Thus, we will dedicate a portion of USAID funds to this project.

To reform fisheries enforcement in Russia, we will conduct site-base work in Kamchatka, and initiate policy work on the international level to facilitate bilateral solutions to the problems in the western Bering Sea. We will support a special team of experts who employ computer technology to monitor vessel movement and daily catch reports in Kamchatka; develop a training program for fisheries inspectors and observers; and facilitate interagency coordination by including representatives from three enforcement agencies and two training academies in this program.

USAID funds will be used to support part of the expenses involved in testing and perfecting a variety of satellite technology used in monitoring vessels in the western Bering Sea. This information will be used in WWF's recommendations to Russia's Federal Fisheries Agency as to which system should be required by all vessels.

Additionally the inspectors will assist the Commander Islands in selecting and installing a monitoring system on a vessel the reserve will be renting to assist with enforcement patrols in 2003. The inspection team will pay special attention to the Commanders, providing scrutiny, close communications with the reserve and other agencies and operational reporting to cut down on poaching in the region. Finally, to improve interagency cooperation in enforcement, we have asked the inspectors to assist in designing and participating in a training course for enforcement staff of several agencies.

Level of effort for Activity 2.3:

\$102,250 (\$22,500 USAID, \$78,750 WWF)

Anticipated outputs/results for Activity 2.3:

1. Technical review (in Russian, with English-language summary) of at least ten various satellite monitoring systems, based on analytical work based in Petropavlovsk
2. Recommendations on the most effective, reliable system for satellite systems issued to the federal fisheries agency, based on outcome of field tests and analytical work
3. Increased patrolling, and enforcement of Commander Islands Nature Reserve
4. Design and completion of training course for 50 fisheries enforcement inspectors working in the western Bering Sea.

Other Specific Program Details

Travel

International travel planned under this program include the following trips:

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
Margaret Williams	USA	Chukotka	1	Site visit
Margaret Williams	USA	Kamchatka	1	Site visit
Margaret Williams	USA	Moscow	1	Site visit

Viktor Nikiforov (WWF Russia)	Moscow	Anchorage, Alaska	1	Spring 2003
Viktor Nikiforov (WWF Russia)	Moscow	Washington, DC	1	Spring 2003
Anisia Shepeleva (WWF Russia)	Moscow	Anchorage, Alaska	1	Spring 2003
Anisia Shepeleva (WWF Russia)	Moscow	Washington, DC	1	Spring 2003
Living Planet Club	USA	Alaska	1	Summer of 2003

Forests of the Lower Mekong

Project Overview

Description of Site

The *Forests of the Lower Mekong* ecoregion complex (the Greater Annamites, the Central Indochina Dry Forests, the Lower Mekong Floodlands and the Cardamon Mountains Global 200 ecoregions) comprises an incredibly high diversity of habitats including deciduous dipterocarp forests, moist evergreen forests, karst limestone forests, open grasslands and savannas, upland plateaus, wetlands, and pristine riparian environments. These habitats support diverse, abundant, and rare wildlife. In a remarkable indication of the unique status of this ecoregion complex, six new large mammal species—the Saola, Large-antlered Muntjac, Roosevelt’s Muntjac, Annamite Muntjac, and the Annamite Striped Rabbit have been described in the Greater Annamites ecoregion alone within the last ten years.

This ecoregion complex is home to other mammal species of outstanding international conservation significance. These include the Kouprey, Javan Rhinoceros, Tiger, Asian Elephant, and Douc and Francois’ Langurs. The region also contains important bird species, such as Edward’s Pheasant, Sarus Crane, Giant Ibis, and the White-shouldered Ibis as well as myriad species of reptiles (such as the Siamese Crocodile—the rarest crocodile in the world), amphibians, fish, invertebrates and plants. The aquatic biodiversity of the region, though not well studied, is already proving to be one of the most diverse in any tropical river system in the world. The forests and associated ecosystems also have significant watershed value with westward drainage’s contributing to the in-stream flows in the lower Mekong basin and eastern drainage’s flowing through Vietnam into the South China Sea.

The Forests of the Lower Mekong (FLM) ecoregion is home to hundreds of thousands of upland and lowland communities who have cultivated the lands, utilized the water resources, and subsisted off the forest products for hundreds of years. In all three countries, minority peoples—many of who practice shifting cultivation—live mainly in the upland areas. The majority of ethnic groups in each country are traditionally lowland wet rice cultivators, though migration into the less densely populated uplands is occurring in some areas, most notably the central highlands of Vietnam.

Threats

- Commercial logging is reducing primary and secondary forest cover;
- Illegal trade in wildlife products, timber, and non-timber forest products (NTFPs) is increasing because of market demand, widening income disparities between rural and urban areas and inefficient law enforcement;
- Commercialization of agriculture and a transition away from subsistence farming is decreasing the sustainability of land-use practices and may lead to agricultural expansion;

- Proposed hydro-electric schemes and irrigation projects have the potential to flood habitat, change drainage patterns, and alter fisheries;
- Road construction and infrastructure development are opening access to natural resources in remote areas; and,
- Swidden agricultural systems, which are traditionally environmentally benign, are being compromised, resulting in decreases in soil productivity and acceleration of forest degradation.

These threats are all heightened by increasing population pressure, the resource demands of industrializing societies, uncoordinated policies and regulations, and more recently, an economic downturn that has drained government coffers and decreased family livelihood options.

Specific happenings in the calendar year 2001:

- **Road construction:** During the last two years, the Vietnamese government has been constructing a new national highway that will follow the route of the Ho Chi Minh Trail. National Highway #1b (the Ho Chi Minh Highway) has been developed with only minimal levels of consideration for social and environmental impacts. The road is in fact not a single highway but a network of roads opening access throughout the entire length of the Annamite Mountains Ecoregion in Vietnam and linking with existing roads in the Lao PDR side of the Annamites. The direct impacts of construction are land erosion, river siltation, and forest clearance. Indirectly, the road will lead to greater levels of settlement in forest areas, facilitate illegal over-exploitation of forest resources and upset local social conditions.
- **Dam construction:** Throughout the FLM, plans are underway to construct dams to supply hydroelectric power and to control flooding. In the Northern Annamites, the Nakai Nam Theun Dam #2 threatens to lead to the direct destruction of some of the richest and most critical forest areas in the FLM. In the Central Annamites Priority Landscape, plans are being prepared to develop a series of dams to control annual flooding. Populations living within the lower catchment areas will need to clear forest areas in the uplands as they search for alternative land.
- **Commercial agricultural expansion:** Over the last five years, the Vietnamese government has promoted the growth of coffee and black pepper agricultural industries in the central highlands (falling largely within the Vietnamese portion of the Central Indochina Dry Forests Ecoregion). This has led to mass migration of people from the Northern Highlands of Vietnam to what, until recently, was one of the least densely populated areas of Vietnam. The movement of large numbers of people and haphazard allocation of land has increased poverty within the indigenous population. This agricultural boom has driven the greatest degree of forest clearance in recent years in the FLM and has seriously jeopardized the long-term feasibility for conservation in the Vietnamese Dry Forests.

FY02 accomplishments

Biodiversity Vision Published. This document details the biodiversity of the region and the scientific consensus on conservation priorities within the FLM. It was created through a highly participatory process. Its publication and wide release have served to inform the biodiversity

action plans of Vietnam, Lao and Cambodia as well as raise awareness and support for conservation investment in this unique ecoregion.

Biological and Socio-Economic Assessments Completed for Central Annamites. Biological advisory teams, established in Laos and Vietnam, worked together to produce the first landscape scale biodiversity vision in Indochina. These studies assessed both threats and opportunities for conservation at larger scales and directly compared conservation priorities with government development plans.

Conservation Strategy Completed for the Central Annamites. WWF and its partners worked together in a highly collaborative process to create a conservation strategy and action plan for the Central Annamites landscape to address threats from illegal logging and hunting, unsustainable natural resource management and agricultural and human settlement expansion.

Central Annamites Landscape Model Attracts the European Union

The European Union proposes to expand an existing integrated conservation and development project (ICDP) based on a single protected area, to include the entire Northern Annamites landscape based on the Central Annamites' model. The EU, which has provided over 20 Million Ecus to the initial ICDP, is looking at increasing its investment by 150% in order to undertake a full landscape-scale Initiative.

Forest Sector Support Program (FSSP) established. WWF, together with the Government of Vietnam and 18 donor and international organizations, signed a Memorandum of Agreement to form a Forest Sector Support Program (FSSP) in November 2001 to coordinate efforts to implement policies such as the Five Million-Hectare Program and the new Forest Sector Development Strategy. WWF has been chosen to represent seven international NGOs in the Technical Executive Committee.

New Sites of Global Conservation Value Discovered in the Eastern Plains. A biological survey south of Phnom Phrich sanctuary discovered a group of small lakes, which were found to support key bird species such as the Giant Ibis, a remarkable bird previously thought to be restricted to very small populations in sites only in the Northern Plains landscape.

Song Thanh Nature Reserve (STNR). STNR, a key protected area in the Central Annamites is now fully operational. Through startup funds from WWF, the reserve was outfitted with essential equipment such as motorbikes, telecommunications and electricity supplies for two existing guard stations.

In a rare move, Quang Nam province showed their commitment to conservation by providing funding to Song Thanh Nature Reserve for a reserve headquarters. This scale of conservation investment from a Provincial budgets usually only happens with pressure from central government.

Project Activities

The **goal** of the ecoregion program for the Forests of the Lower Mekong is to ensure the conservation and sustainable use of biodiversity and maintain the integrity of biological processes across the Forests of the Lower Mekong.

The **objectives** for the program are to:

- Mobilize conservation on an ecoregional scale
- Promote integrated conservation and development in priority landscapes of the Forests of the Lower Mekong
- Promote a supportive policy environment for conservation and sustainable natural resource management
- Lay the foundation for lasting conservation

The activities described below are contingent on available funding. Activities supported by USAID are described in detail. WWF match funded activities are included in this plan to provide context for the USAID supported activities. All funds detailed in this plan are FY03 funds.

Forests of the Lower Mekong Total Level of Effort: \$1,347,887 (USAID: \$260,000; WWF: \$1,087,887)

Objective I: Mobilize conservation at the ecoregional scale

Level of effort for Objective I: \$246,387 (USAID: \$164,886; WWF: \$81,501)

Activity 1.1: Extend Capacity to Mobilize and Manage Large-scale Conservation Across the FLM

Core Team: USAID funding will be used for continued support to the core Ecoregion Team. The team, consisting of an Ecoregional Coordinator, Ecoregion Program Administrator, Ecoregion Scientific Officer, and a Deputy Coordinator, with technical assistance from the US-based Director and Program Officer for East-Asia Pacific, manages, coordinates and supports the FLM ecoregion program. The Cambodia Country Director, Financial Officer, and GIS/Data Manager continue to contribute a quarter of their time to Dry Forest ecoregion activities.

Two additional staff will be brought onto the core team in FY03. An Ecoregion Officer, based in Lao PDR, will be hired to jumpstart and manage activities related to the both the Annamites and Dry Forests in Lao PDR. Currently, our office in Lao has only one full-time program staff. A Dry Forest Coordinator will be also hired to support the management, technical and fundraising activities in support of the Dry Forest component as the program is expanding and there is a need to increase the capacity to deliver conservation results.

Partners. WWF's long-term goal is to transfer the management and implementation of the ecoregion program to its partners in the FLM. Toward that purpose and based on requests and training needs assessments, WWF will develop and conduct a training course in ecoregion conservation for government and NGO partners working in the FLM. The weeklong course will be conducted in Vietnam, Cambodia and Lao PDR.

In order to accomplish this activity WWF will:

- Maintain an effective core Ecoregion Team with technical assistance from two US-based staff to carryout ecoregion conservation in the FLM. (ongoing) USAID ~ \$50,995 Maintain the contributions of Cambodia staff to FLM activities. (ongoing) USAID ~ \$33,950 Hire an Ecoregion Officer in Lao PDR to provide support the implementation of the program in Lao PDR by working closely with government and non-governmental partners. (October 2002) USAID ~ \$5,500
- The core team, with technical support from the US-based staff and WWF network, will prepare and deliver a training course in ecoregion conservation to government and non-government partners in Lao PDR, Cambodia and Vietnam in order to improve understanding of the approach to ensure that the approach is incorporated within other's strategies and activities. (2nd and 3rd quarter) USAID ~ \$14,420
- Hire a Dry Forests Coordinator to be based in Phnom Penh to provide critical managerial and technical support to the program. (October 2002) USAID ~ \$24,000

Anticipated Outputs/Results for Activity 1.1:

- I. Managerial and coordination efforts improved in Lao PDR via the appointment of a dedicated Ecoregion officer responsible for supporting activities related to ecoregion conservation in Lao PDR.
- II. Better integration of the ecoregion approach into the wider activities of WWF staff and partners generated by an improved understanding of ecoregion conservation initiated through three training workshops held in Vietnam, Lao PDR and Cambodia.
- III. Increased capacity to develop and strengthen the implementation of the Dry Forests program particularly in Cambodia.

Level of effort for activity 1.1:

\$216,128 (USAID: \$147,859; WWF: \$68,269)

Activity 1.2: Engage Broader Stakeholder Support through Advocacy-based Communications

WWF has developed Greater Annamites and Dry Forests communication strategies and action plans to increase technical, financial and political support for the FLM ecoregion program and to advocate for action on key conservation threats such as the Ho Chi Minh highway development, agricultural expansion and unsustainable natural resource use. The key messages WWF will send to governments, international and national NGOs, the commercial sector and local communities to increase support are:

- "The Dry Forests, if restored to their former glory as the "Serengeti of Asia", will provide a future of economic opportunities for the Cambodian people through tourism and wildlife ranching."
- "The Greater Annamites, an incredible area of unique biodiversity and a storehouse of natural resources, once sheltered the people of Vietnam and Lao PDR from war. Now, this same area needs our protection and care, so that it can continue to provide beauty, food, and shelter for generations of Vietnamese and Laotians to come."

Specific activities WWF will undertake with USAID support, which will be targeted at mitigating the effects of Ho Chi Minh highway development, agricultural expansion, and unsustainable natural resource use, include:

- Produce a single packet for each of the focal ecoregions with insertable factsheets on specific issues and activities so that it can be easily tailored for different audiences. (February 2003)
- Establish communications staff in Cambodia and Lao PDR to improve the delivery of the strategy and action plan throughout the entire FLM. (October 2002)
- In the Dry Forests, use multiple media, such as short radio programs, a quiz show, community theater, and study tours to reach various audiences, ranging from government partners to illiterate members of rural communities. (ongoing)
- In the Annamites, WWF will investigate the feasibility of several high profile communication ideas, including a project to encourage businesses and corporations to support conservation initiatives and promote more environmentally sound business practices. This is particularly timely due to the recently signed bilateral trade agreement between Vietnam and the US. (3rd Quarter)

Anticipated Outputs/Results for Activity 1.2:

- I. A greater level of support (financial, technical, political) for the program achieved through an FLM communication strategy, leading to an increase in conservation results as more partners align their activities with the objectives of the ecoregion program.
- II. Progress on key conservation results (such as the promotion of sustainable natural resource management and reduction of unsustainable development activities) through advocacy-based communications.
- III. Key target audiences (Government Agencies and local communities) aware of the importance of the Dry Forests and the Annamites for sustainable development and conservation, the scope of the FLM program, and their rights and responsibilities regarding the program's activities and goals.

Level of effort for activity 1.2:

\$30,259 (USAID: \$17,027; WWF: \$13,232)

Objective II: Promote integrated conservation and development in priority landscapes of the Forests of the Lower Mekong.

Level of effort for Objective II: \$256,841 (USAID: \$28,475; WWF: \$228,366)

Activity 2.1: Develop and strengthen the Central Annamites Conservation Initiative, Greater Annamites Ecoregion

The Central Annamites is threatened by illegal logging and hunting, unsustainable natural resource management and agricultural and human settlement expansion. During the last two years, WWF and its partners (Provincial and national governments, community representatives, Birdlife International, American Museum of Natural History, SNV, Frankfurt Zoological Society) have worked together in a highly collaborative process to create a conservation strategy and action plan for the Central Annamites landscape to address these threats. The completed strategy tell us the areas of highest biodiversity importance, i.e., where we need to work, as well as the opportunities and constraints present in those areas that we need to address in order to successfully conserve the landscape.

In FY03, WWF as the lead facilitator of the Central Annamites Initiative will employ a full-time Central Annamites Officer to implement priority activities in the Strategy and Action Plan, working closely with the Central Annamites Steering Committee. A primary responsibility of the Committee will be to ensure that individual activities across the landscape continue to contribute to conservation of the landscape as a whole. These activities fall into five categories:

1. Sustainable forest management
2. Species conservation
3. Integrated conservation and development
4. Protected Area management, and
5. Environmental education.

USAID support in FY03 will be directed towards implementing priority activities in each of these five categories.

In addition, a joint WWF and Vietnam Government team will establish a detailed monitoring and evaluation (M&E) system for the Initiative to measure the impact of the program based on two main criteria—poverty alleviation and biodiversity conservation.

Activities in the 5 categories underway and continuing in FY03 are:

Species Conservation One of the key objectives of the Conservation Strategy is to reduce hunting pressures on Tigers, Saola and the Gray-Shanked Douc Langur: all highly endangered species of the Central Annamites. Therefore, WWF will continue developing a Central Vietnam Tiger Corridor, seek funding for Saola protection—the flagship species of the Annamites now on the verge of extinction, and work to establish a Gray-shanked Douc Langur protected area in Quang Nam province.

MOSAIC (see Activity 3.1 for more detail) This project is designed to promote sustainable resource management and mitigating agricultural and human settlement expansion. It is underway in Quang Nam province in Vietnam, identified as a priority area in the Central Annamites strategy.

Environmental Education EE is a cross-cutting activity that aims to alleviate the range of threats by educating stakeholders on the importance of biodiversity conservation and the role sustainable natural resource management can play in individual, family, and community life. WWF will use matching funds to pilot an innovative approach to environmental education: creation of a provincial soccer league in the Central Annamites province of Quang Nam. The Soccer Project aims to increase the level of awareness regarding important biodiversity in the Central and Greater Annamites and to build social bridges between communities in the Central Annamites, starting first in Quang Nam. Conservation messages will be broadcast during the game and through media promoting the matches.

In order to accomplish this activity, WWF will:

- Employ a Central Annamites Manager to operationalize and implement the Central Annamites strategy and action plan. Initial activities will include establishing a new terms of reference and procedures for the Central Annamites Steering Committee that reflect its role in the implementation phase of the Initiative, establishing reporting and communication mechanisms among Initiative partners, and generating funding proposals for program priorities based on the strategy. (September 2002).
- Initiate a large-scale M&E system for the Central Annamites strategy. (November 2002)
- In cooperation with the provinces of Thua Thien Hue and Quang Nam in Vietnam, secure populations of the most endangered species (Tiger, Douc Langur and Saola) by developing a tiger corridor, establishing a Douc Langur protected area and direct protection for the Saola through partnerships between provincial government and local communities. (2nd, 3rd and 4th quarters)
- Create greater awareness of conservation issues the people of Quang Nam province through a new high profile soccer league. (March 2003)

Anticipated Outputs/Results for Activity 2.1:

- I. An operational Central Annamites Initiative with a dedicated manager and steering committee to ensure the implementation of the Central Annamites strategy and Action plan and delivery of the conservation results devised by the stakeholders and partners
- II. A framework for monitoring and evaluating the impact of the Initiative related to measuring biological conservation and poverty alleviation outcomes
- III. Reduced hunting pressures throughout the Central Annamites for Tigers, Gray-shanked Douc Langurs and Saola.
- IV. Increased awareness amongst the government and people of Quang Nam province of the objectives and approaches of the Central Annamites Initiative through a conservation-focused soccer league in Quang Nam province, Vietnam.

Level of effort for activity 2.1:

\$149,413 (USAID: \$13,775; WWF: \$135,638)

Activity 2.2: Develop and strengthen the Conservation Initiative for The Eastern Plains, Dry Forests of Central Indochina Ecoregion

The two major threats to the integrity of the Eastern Plains landscape are high levels of hunting and habitat fragmentation due to settlement expansion and agricultural concessions. In response to these threats, the June 2001 Dry Forest Conservation work set the following goals: protect and restore species, maintain habitats and ecological processes, have natural resources support socio-economic development and appropriate development ensure biodiversity conservation, and ensuring that conservation initiatives are financially sustainable. Activities to achieve these goals include:

1. Supporting a network of well-managed protected areas
2. Developing sustainable uses of wildlife, such as ecotourism
3. Controlling wildlife trade, and
4. Enhancing scientific understanding of high priority conservation sites and the role of natural resources in economic development

In 2003, the primary activities will be:

Supporting a Network of Protected Areas²

- We will continue to improve the management capacity and effectiveness of **Phnom Prich Wildlife Sanctuary and the Siem Pang District** of Stung Treng Province to protect species, habitats and ecological processes. This year, park staff in Phnom Prich will field-test a management effectiveness tool developed by the WWF/World Bank alliance. (March 2003)
- In both Phnom Prich and Siem Pang, WWF will work with park staff to develop and implement a system of monitoring relative abundance of target species. The results of this monitoring will provide baseline data on abundance to help managers monitor the impacts and effectiveness of their activities. (August 2003)
- The GEF Eastern Plains grant is expected to begin in approximately the middle of 2003. These funds will allow WWF to assist the Ministry of Environment to begin to **manage Lomphat Wildlife Sanctuary**—currently a "paper" protected area. (June 2003)
- Created in August 2002 by the Royal Government of Cambodia, the **Mondilkiri Protection Forest** is the largest protected area in Cambodia. It lies between the Vietnamese border (and Yok Don National Park) and Lomphat and Phnom Prich wildlife sanctuaries. In early 2003, the Government is expected to receive a large grant from the International Tropical Timber Organization (ITTO) to manage this area. The Government also is expected to sub-contract some management activities to conservation NGOs. WWF Cambodia has offered its assistance to participate directly in management activities for this area. WWF is collaborating on this endeavor with other NGOs working in the area, such as WCS and FFI. (July 2003)

Developing Sustainable Uses of Wildlife - Ecotourism

WWF will develop ecotourism in three stages: strategy development, pilot site identification, and pilot site establishment.

² The area designated for conservation in the Eastern Plains, encompassing Phnom Prich, Siem Pang, Lomphat, and the Modulkiri Protection Forest represent the largest contiguous areas for conservation in Indochina.

- WWF and its partners will develop an eco-tourism strategy for the Eastern Plains that supports ecoregional conservation and provides alternative livelihoods to local people to decrease unsustainable hunting/harvesting pressures. (June 2003)
- Following the strategy development, WWF will conduct a rapid feasibility assessment of the three candidate pilot sites identified in 2002, and develop an operational management and business plan for the site that is selected. (August 2003)
- WWF will initiate establishment of an intensively managed pilot site using a locally appropriate adaptation of the "wildlife conservation by sustainable use" model that has been so successful in southern Africa.³ The pilot site is intended, over the next several years, to demonstrate that restoring wildlife populations can offer significant and sustainable economic development opportunities through tourism and game cropping. By generating income from tourism and game cropping, the model also improves the financial sustainability of conservation efforts. In the long term, the success of the pilot site is expected to encourage others to replicate it in other areas of the dry forest ecoregion. (September 2003)

Controlling Wildlife Trade

- WWF, with support from USAID, will work with a consultant and other stakeholders to develop a strategy to combat the illegal trade in wildlife in northeastern Cambodia. In 2003, this strategy will be implemented. Some key interventions that are likely to be pursued are increased awareness and education work with key target audiences (government, police, military, local communities), and training, equipping, and supporting some mobile enforcement teams. (December 2002)

Conservation Planning

In conjunction with the MOSAIC project (3.1) WWF will:

- Undertake a detailed biological assessment and situation analysis for the Eastern Plains as the first step towards a full conservation plan that will be completed by January 2003. The plan will be developed with government and non-government partners (such as FFI, WCS and the Cat Action Treasury). (January 2002)
- Initiate camera trapping/sign surveys and rapid surveys of communities in a high priority Dry Forest area in southern Laos to assess impacts of shifting cultivation and human-elephant conflict. (May 2003)
- To support identification of key habitats needed by the elephants (which will help conservation managers develop ways to protect these habitats) WWF will provide GIS support to an FFI project to track elephant movements in Eastern Mondulhiri. Satellite tracking collars will be placed on two elephants and their movements will be recorded. (June 2003)

Anticipated Outputs/Results for Activity 2.2:

- I. Improved management of Phnom Prich WS, Siem Pang District, and Lomphat WS as critical conservation areas within the network of the Eastern Plains and Dry Forest ecoregion. For Phnom Prich and Siem Pang, this will include baseline data on the PA

³ Private landowners and communities in southern Africa have been converting farms and ranches into game viewing and cropping reserves because they can earn more money this way than through farming.

- management effectiveness-tracking tool of the WB/WWF Alliance, and baseline data on the abundance of some of the priority species in these areas and a system of monitoring this abundance.
- II. Greater knowledge about the biodiversity status and socio-economic status of the relatively unknown area of the Dry Forest Area in Southern Laos.
 - III. To realize and demonstrate the economic potential of ecotourism within Eastern Plains, a pilot site for the "wildlife conservation through sustainable use" model will be selected, an initial development plan written, and initial activities completed.
 - IV. Improved enforcement effort against the wildlife trade at specific sites, along major strategic transport routes and throughout the landscape as a whole

Level of effort for activity 2.2:

\$107,428 (USAID: \$14,700; WWF: \$92,728)

Objective III: Promote a supportive policy environment for conservation and sustainable natural resource management

Level of effort for Objective III: \$834,659 (USAID: \$56,639; WWF: \$778,020)*

Activity 3.1: Community Management of Natural Resources: The MOSAIC Project

The Management of Strategic Areas for Integrated Conservation (MOSAIC) project is aimed at reducing threats from unsustainable natural resource management and agricultural and human settlement expansion by promoting co-management of natural resources between communities and provincial governments. Local communities within both landscapes are highly reliant on forest resources for food and livelihoods. However, these communities are not currently involved in the management of the forests within which they live. MOSAIC will achieve co-management in both the Central Annamites and the Eastern Plains by (1) shaping land allocation; (2) building community management capacity; and (3) building provincial capacity in participatory approaches to conservation.

MOSAIC was initiated in FY02 in Quang Nam province in the Central Annamites, as identified in the Conservation Strategy. Quang Nam's forests are highly fragmented and support a large local population. In the same year, MOSAIC was initiated in Mondulhiri Province in the Eastern Plains, identified during the Dry Forests Conservation Strategy Workshop, where the forest areas are far more intact and presently relatively few villages are found within the forest area. Specific activities of the MOSAIC project differ in each landscape, therefore, though goal and approach are the same.

Quang Nam, Central Annamites, Vietnam

* Note: Part of these funds are anticipated but not secured.

Activities in the first year focused on developing an understanding, within all related provincial departments, of methods and skills required for large-scale planning and conservation management and the role of communities as key actors in landscape conservation. The work this year will build on those foundations by: (1) supporting the province's development of a forest land strategy⁴ to include community level land allocation, (3) build co-management capacity among provincial and community members, and (2) developing community management pilot interventions in 3 sites.

In order to achieve MOSAIC's goal in Quang Nam, WWF and our provincial partners, with support from USAID will:

- Support Quang Nam's forest land strategy by contributing technical assistance with regard to the identification of high conservation value forests (HCVFs) and biological prioritisation obtained from field surveys, habitat and species threat analysis, community development needs, co-management options and watershed protection priorities to aid provincial forestry, conservation, enforcement and low-impact development planning. (September 2003)
- Establish working examples of community co-management in the 3 pilot sites identified through the provincial and district consultations in FY02. The creation of these new management practices will be undertaken in cooperation with a wide set of provincial and district partners to promote repetition of this activity by district personnel elsewhere in the province. (Start date, November 2002)
- Promote sustainable management of Quang Nam's forest resources by advocating for improved land allocation policy based on community co-management (developed through stakeholder consultation based on demonstration activities in 3 pilot sites) (Start date, November 2002)
- Train community members and provincial officials in the development of village management and development plans that protect forest resources and biodiversity over the long-term. (3rd quarter)
- Train the Forest Protection Department (FPD) in field survey and species monitoring techniques, enforcement and protected area management, priority species work and community liaison activities throughout the duration of the project so that the FPD are able to monitor and protect Quang Nam's biodiversity through community partnerships, biological work, and enforcement. (September 2003)

Anticipated Outputs/Results for Activity 3.1 (Quang Nam):

Quang Nam

- I. Provincial agreement on land allocation to villages and incorporation of co-management concept into provincial policy, in order to promote community rights, protect forest resources, and ultimately alleviate trade driven resource and biodiversity depletion.
- II. Village management plans developed and implemented in 3 pilot communes with monitoring and enforcement assistance from district authorities, allowing communities to sustainably manage and protect their forest allocation and its biodiversity.

⁴ This provincial forest land strategy is required by Vietnam's Five Million Hectare Restoration Program.

- III. Rangers trained and motivated to assist communities in managing forest resources and protecting biodiversity in 3 pilot communes and 1 protected area in order to reduce the threat of over exploitation of forest resources and illegal hunting of protected species.
- IV. Quang Nam 5MHP forestland strategy includes conservation goals, thus promoting informed decisions on low-impact development and creating long-term consensus by policy makers on biodiversity conservation.

Mondulkiri, Eastern Plains, Cambodia

Activities in the first year focused on increasing awareness and understanding among government officials and indigenous communities about conservation issues, land tenure and resource-use management issues. Provincial capacity was built through training and fieldwork in participatory conservation. In FY03, we will build on this foundation by: (1) supporting co-management land use planning, in line with the Cambodian government policies on community management of natural resources; (2) improving the ability of both government (all levels) and communities to plan and manage natural resources for conservation and development, and (3) expanding these initial activities to other communities and provinces of the Eastern Plains.

In order to achieve MOSAIC's goal in Mondulkiri, WWF and our partners will:

- Establish community-based wildlife management techniques to restore wildlife populations in areas under present informal management by local communities through **Participatory Biodiversity Assessments and Monitoring** techniques in several pilot communities and expand to new communities. (April 2003)
- Support community resource mapping and the development of resource management plans for target communities living in conservation priority areas. These plans will integrate the needs of conservation and sustainable development, based on local needs and scientific analysis of resource management. Community resource mapping will be undertaken in several pilot communities using the **Participatory Land Use Planning (PLUP)** technique developed in 2001 and 2002. (April 2003)
- Complete the design and implementation of **Resource Rights and Responsibilities Awareness (RRaPP)** raising and **Environmental Education** related to Conservation and **CBNRM** in several pilot communities and expand to other areas. (April 2003)
- Improve the national policy framework for Participatory Conservation & Natural Resource Management Planning (**CBNRM**) (September 2003)

Anticipated Outputs/Results for Activity 3.1 (Mondulkiri):

Mondulkiri

- I. Improved management by local communities of high conservation priority wildlife in Mondulkiri province in areas of strategic importance for conservation by improving hunting practices and establishing locally derived management regulations.
- II. Increased recognition and acceptance for community management areas within and adjacent to protected areas in Mondulkiri to reduce the level of threat from external alternative land-use pressures and to establish areas of protection from external hunters

- III. Better management of natural resources and protected areas by improving the understanding of local people in Mondulkiri of their rights and responsibilities related to natural resource management.
- IV. Improved policy framework for community based natural resource management in Cambodia .

Level of effort for activity 3.1:

\$192,843 (USAID: \$56,639; WWF: \$136,204)

Activity 3.2: Promote Sustainable Forest Management

Vietnam, Cambodia and Lao continue to suffer the loss of primary and secondary forest cover caused by unsustainable logging practices and illegal trade in timber and non-timber forest products. In FY03, WWF will expand the promotion of sustainable forest management from Vietnam and Cambodia into Lao PDR. The promotion of SFM will help reduce the acceleration of forest degradation caused by agricultural expansion and a shift away from swidden agricultural systems.

Vietnam:

WWF will continue to promote sustainable forest management by representing the seven International NGO partners on the Technical Executive Committee of the Forest Sector Support Program (FSSP). This committee provides guidance on the development and implementation of programs within the Forest Development Strategy. Consequently, WWF remains well placed to ensure that biodiversity considerations and responses to threats such as commercial logging, illegal timber trade, and agricultural expansion are incorporated into sectoral development initiatives.

In addition, WWF is working through the FSSP to build capacity for SFM through pilot projects in the Central Highlands. Finally, to ensure that forest areas with environmental, biodiversity, landscape or socio-economic values of critical importance are identified, and maintained or enhanced, we are seeking to develop national guidelines for high conservation value forests (HCVFs) to be used by the Vietnamese government for improving the design and management of sustainable forest management in protected landscapes.

In FY03, WWF will:

- Continue support to the Vietnam National Working Group on Sustainable Forestry. (Ongoing)
- Ensure that biodiversity and conservation issues are integrated within projects and programs developed under the FSSP framework. (Ongoing)
- Promote sustainable forest management in four Central Highlands (Lam Dong, Gia Lai, Dac Lac, Kon Tum) Provinces, selected by the National Working Group on Sustainable Forestry. These provinces still contain some of the most extensive forest areas in Vietnam and are under great threat through poor management, agricultural expansion and settlement of people looking for new land. (Start date, November 2002)

- Pilot the High Conservation Value Forest concept in Quang Nam province, Vietnam in the Central Annamites as part of the MOSAIC project (see 3.1). WWF will assist the Provincial government in identifying HCVPs as part of our technical assistance for the development of the Province's forest land strategy. (September 2003)

Cambodia:

SFM will remain difficult to promote in Cambodia where most forests are managed by concessionaires who are typically unwilling to invest in better management practices when the future of their licenses is uncertain. WWF will seek to identify opportunities for sustainable forest management to become a greater part of the forest concession system by lobbying for the participation of NGOs and communities in the ongoing review of concession management plans.

In FY03, WWF will:

- Contribute to the review of concession management plans in Cambodia; actively promoting the acceptance of sustainable community forest management as an alternative to the concession system adopted by the Cambodian government. (Ongoing)

Lao:

WWF will build upon SFM activities that began in the latter part of FY01. These activities saw the planning of national and provincial level workshops to promote SFM and forest certification as well as the development of a plan for pre and main certification assessments of Village Forest Associations. In the past the Government of Laos had shown interest in forest certification which was included as an activity within the previous Forest Management and Conservation Programme (FOMACOP). This interest has recently been rekindled and looks set to result in the piloting of group forest management certification in two provinces during FY02. In addition, the government of Lao is developing a twenty-year forestry strategy—currently without NGO involvement. WWF is, however, actively seeking an entry point to influence this strategy.

In FY03, WWF will:

- Provide technical support to Village Forest Associations in Lao PDR to help them address any conditions for the certification of the management of their forests. (September 2003)
- Contribute to the development of Lao's twenty-year forest strategy. (September 2003)

Anticipated Outputs/Results for Activity 3.2:

- I. The planning and implementation efforts of the 5MHP and other major Governments forest programs will be coordinated in synergy with the Conservation Strategy for the Central Annamites
- II. Sustainable forestry practices, measured by the standards and criteria developed by the Vietnamese working group for Sustainable Forestry and the Forest Stewardship council, in four pilot sites within the Central Highlands
- III. National guidelines for the identification and management of HCVPs will be drafted
- IV. Specific obstacles to the sustainable management of forest concessions in Cambodia will be identified through the review of management plans.
- V. Forest certification will be identified as an important component of sustainable forest management within the Government of Lao's Forest Development Strategy.

Level of Effort for Activity 3.2:

\$295,816 (USAID: \$0; WWF: \$295,816)

Activity 3.3: Tackling the fundamental threats to biodiversity and sustainable natural resource management at national and regional levels

Improving national and regional public policy related to sustainable natural resource management and biodiversity conservation is key to the FLM program. WWF will, therefore, conduct a detailed analysis of the root causes of biodiversity loss to identify policy areas that require reform or support, dependent on their impact on biodiversity. The priorities identified within the analysis will form the focus of the policy level work of the program for the coming years.

In addition to the main root cause analysis activity, the program has identified critical threats in need of policy action, including:

Increase in impacts from expanding tourism base: As the region develops and opens up after of isolation from the global community, tourism is being promoted as a key mechanism for development. Substantial infrastructure is presently being built and planned for throughout the ecoregion. Unplanned, expansive tourism is beginning to appear within areas of high conservation value such as protected areas. This is likely to have a detrimental effect on the biodiversity and long-term sustainability of natural systems based tourism. WWF will participate in a tourism threat assessment for the region.

Agricultural expansion: Agricultural expansion is a key threat to biodiversity throughout the world. WWF is launching a new global program to tackle this issue focusing on a number of ecoregions, including the FLM. In July 2002, WWF initiated a scoping assessment of the key issues related to commercial agriculture in the Lower Mekong. The aim of this assessment was to identify potential priority issues that could form the focus of a more concerted effort in the region.

Wildlife trade: Extensive commercial trade in wildlife is one of the most immediate threats to the FLM. TRAFFIC, with input from WWF, is presently developing a regional strategy to combat this trade.

Lack of consideration of biodiversity conservation in Lao PDR: At present biodiversity conservation is a low priority for the government of Lao as economic and social development is their highest priority. The role of biodiversity conservation within a sustainable approach to development is not understood by key policy makers in Lao PDR. WWF will conduct an economic evaluation of the biodiversity of Lao PDR in order to demonstrate the true value of biodiversity for economic and social development.

In order to accomplish this activity, WWF will:

- In collaboration with key government and non-government partners undertake a root cause analysis of biodiversity loss in the Greater Annamites culminating in a concrete action plan including policy advocacy on development and sustainable natural resource management. (November 2002)
- Undertake an assessment of the negative impacts of ecotourism in partnership with the American Natural History Museum, Wildlife Conservation Society and BirdLife International and provide recommendations for best practices for ecotourism operations presented at a symposium in New York attended by key ministries from four countries (Spring 2003)
- Undertake a detailed policy analysis of a key agricultural threat identified in the scoping study undertaken in July 2002 (August 2002)
- Support the completion of a wildlife trade strategy for Indochina undertaken by TRAFFIC Indochina by 2004, and a series of trade studies in Vietnam. (September 2003)
- Prepare an economic evaluation of the biodiversity of Lao PDR in the first two quarters in order to provide advocacy materials to persuade the Government of Lao PDR to include biodiversity conservation within its national development strategy. The aim of the project will be to gain acceptance of this role and to ensure that biodiversity conservation is reflected as a key component of the national development policies. (December 2003)

Anticipated Outputs/Results for Activity 3.3:

- I. Major threats to the biodiversity of the FLM will be reduced by tackling their fundamental root causes through detailed analysis undertaken by wide sector of partners and stakeholders

Level of effort for activity 3.3:

\$346,000 (USAID: \$0; WWF: \$346,000)

Objective IV: Lay the foundation for lasting conservation

Level of effort for Objective IV:

\$10,000 (USAID: \$10,000)

Activity 4.1: Community Participation for Conservation Success: Promoting community participation towards effective conservation of Vietnam's natural heritage through community-based Environmental Education

This activity was included in the implementation plan for FY02 but was not started as funding from EAPEI was delayed. The funding in the amount of \$238,881 from EAPEI is now secured and the project will commence in this year. Please refer to the FY02 Implementation Plan for details on this activity. Below, please find a brief summary:

Xuan Mai University and the Ministry of Agricultural and Rural Development (MARD) will work in partnership with WWF to develop curricula for pre-service and in-service training in CBEE, train a team of University trainers and pilot the EE training courses. This training of trainers initiative will aim to transfer knowledge to two priority sites in the Central Annamites in addition to raising awareness. In FY03 the CBEE will focus on building the institutional framework for the program and identifying the focal protected areas for CBEE activities.

Specific Activities for FY03: (~\$110,000)

1. Participatory approach to CBEE institutionalized within Xuan Mai University.
 - Develop course materials and establish curriculum development working group, comprised of Xuan Mai University staff, WWF EE Unit staff and the Curriculum Specialist and train trainers. (June 2003)
2. Core Group of CBEE professionals established and increasing.
 - Identify selection criteria for pilot in-service training participants (existing protected area staff dedicated to undertaking the role of environmental educators) (December 2002)
 - Two-month in-service training course conducted (August 2003)
3. Identify two focal protected areas and relevant staff in the Central Annamites to implement CBEE activities. (December 2002)
4. Detailed project performance measuring plan developed. (January 2003)
5. Evaluation meetings held for training of trainers course and in-service training course (September 2003)

Anticipated Outputs/Results for Activity 4.1:

- I. Collaboratively designed and tested CBEE curricula established within pre-service and in-service training programs at Xuan Mai University for protected area managers
- II. Handbook on CBEE produced that can be used by protected area managers in forest protected areas in Vietnam and adapted for use in other countries.
- III. A core group of University staff trained as trainers in CBEE
- IV. Approximately 20 staff members within MARD with practical training in all stages of developing EE as a critical tool for achieving effective conservation results
- V. Two focal protected areas identified for implementation of CBEE activities

Activity 4.2: Building a long-term constituency for Ecoregion Conservation in the FLM

Through the strategy development in the FLM, WWF has established a coalition of partners in conservation. WWF's goal is to progressively shift ownership, management, and implementation of the strategy to this coalition.

WWF has already laid the groundwork for local ownership of ecoregion conservation. In Vietnam, WWF has been successful in getting the ecoregion concept included in the government-donor Forest Sector Support Programme, which acts as the coordinating mechanism for all government forestry activities and most protected area activities. In Lao PDR, WWF is working to embed ecoregions into the National Biodiversity Strategy and Action Plan and the

Forestry Strategy. WWF successfully added it into the recent Memorandum of Understanding with the Lao National Mekong Committee (which oversees forestry, tourism, transport and agriculture related to the Mekong River). In Cambodia, the approach is to embed ecoregions into the forestry strategy and to consolidate the present informal coalition for the Dry Forests presently supported by the Royal Government of Cambodia.

This year, WWF is initiating a long-term process to transfer responsibility and ownership of the program to our partners in each of the three countries that make up the ecoregion.

In order to accomplish this activity, WWF will:

- Establish a working group (to replace the temporary Steering Committee) for the Greater Annamites under the Forest Sector Support Program in Vietnam with clear terms of reference, goals and objectives, common targets and a broad action plan for implementation (2nd Quarter)
- Establish a Steering Committee in Lao PDR comprising representatives of the main partners with an expressed interest in common goals for the Greater Annamites with clear terms of reference, goals and objectives, common targets and a broad action plan for implementation (2nd Quarter)
- Create a partnership for the Dry Forests comprising government and non-government partners to detail common goals and objectives, programmatic targets and a broad action plan for implementation. (1st Quarter)

Gain commitments through consultation and negotiation and support for the principles and objectives of the program through formal partnerships at all levels of implementation where appropriate. (Ongoing)

Anticipated Outputs/Results for Activity 4.2:

- I. A more effective and efficient program based on increased synergy and collaborative effort to achieve a greater scale of impact to meet the goals and objectives of the FLM program in Cambodia, Lao PDR and Vietnam
- II. An increased probability that the program will be sustainable and that the aims, objectives and principles of the program are imbedded within government and non-government policies, programs and projects

Level of effort for the activity 4.2:

\$10,000 (USAID)

List of key staff involved:

- Ecoregion Management team
(Mike Baltzer, Ecoregional Coordinator; Rob Shore, Ecoregion Program Researcher, Mac Tuyet Nga, Program Officer, Jenny Springer, Director for East Asia-Pacific program, Kristin Clay, Program Officer for East Asia-Pacific program)
- WWF Country Managers

(Roland Eve, Laos Country Manager; Dale Withington, Cambodia Country Manager, Tran Minh Hien, Vietnam Country Manager)

- Dry Forest Conservation Coordinator (to be appointed)
- Dry Forest Landscape Manager (to be appointed)
- WWF Cambodia staff
- Dr. Andrew Maxwell (Technical advisor to the WWF Cambodia Program)
- WWF Vietnam Biological Advisor (Barney Long) and Community Consultation specialist (James Hardcastle)
- Central Annamite Landscape Coordinator (Nguyen Thi Dao in Vietnam)
- Ecoregion Program Officer in Lao (to be appointed)
- WWF Indochina Forest Program Coordinator (Timothy Dawson)
- WWF Cambodia community and forestry team (Seng Teak, Toby Carson)
- Truong Viet Hung, Communications Unit Officer, WWF Indochina Program
- WWFUS Conservation Finance Unit
- Mike Matarasso
- Environmental Education Coordinator, WWF Indochina Program
- Curriculum Development Project Officer
- WWF Staff from the wider organization network
- Communication staff of WWF International, WWFUS and WWUK

Other Specific Program Details

Monitoring & Evaluation

In 2002, the Steering and Technical Support Groups for the FLM ecoregion program drafted an strategy and action plan for the two focal ecoregions. These plans identified clear activities to be undertaken in FY03 and broad thematic lines for the next five years. Included in these action plans was a programmatic M&E plan. The plan is based on a pressure, state and response model for M&E. An indicator for success for each result area of the program has been identified. This system is the first attempt at an M&E system for the program and therefore its effectiveness will be tested and refined over the next few years.

At the landscape level, a detailed M&E system will be developed in 2003. This system will be based on measuring and evaluating the impact and approaches of the Central Annamite Initiative according to two broad criteria; biodiversity conservation and poverty alleviation targets. The system will be developed in a participatory manner involving key stakeholders within the landscape. This will be the first large-scale programmatic M&E system developed in Vietnam and may be a pilot for the FSSP.

Financial Sustainability

One of the key activities of the program this year will be to imbed the program into established programs such as the Forest Sector Support Program in Vietnam. Activities will also be aimed at broadening the number of partners contributing to the program including government partners and donors. This is an attempt in part to ensure that the program receives attention in the long-

term and financial contributions are received from an increasingly diverse source-base including the most sustainable of financial sources, government budget lines.

Environmental Education & Communication

Each year specific emphasis has been placed on communications and environmental education in order to ensure the long-term sustainability of the program (the basic philosophy of the fourth objective – laying the foundations for long-term conservation). A communication strategy was developed by the program this year with the objective to increase the profile of the program and its objectives, approaches and activities and to build awareness at all levels of society of the importance of biodiversity conservation and sustainable natural resource management.

Furthermore, this year the program will include a specific activity in Vietnam to build the institutional capacity for delivering community based environmental education (see activity 4.1). This project was developed in recognition that the long-term effectiveness of the program will depend on the understanding of local communities of the importance of biodiversity conservation and sustainable natural resource management in their lives as a route to sustainable development and livelihood improvement

Travel

Travel support is provided to enable program staff of WWF-US (Jenny Springer and Kristin Clay) to travel to the region for the purposes of program development/ management/ review. Travel support is also provided to WWF-Indochina program staff for program development/management/review within the ecoregion. Finally, international consultants will be needed over the course of the year to assist with biological visioning, marketing and communications strategy development, and environmental education training.

Travel for program staff and consultants is estimated to include the following trips:

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
Senior Program Officer	U.S.	Manila	2	Monitoring
Director	U.S.	Manila	2	Monitoring
Program Director	Philippines	Indonesia	2	Workshop
Program Director	Indonesia	Philippines	2	Workshop

Sulu-Sulawesi Marine Ecoregion

Project Overview

Description of site

The Sulu-Sulawesi Sea -- surrounded by Indonesia, Malaysia and the Philippines -- is globally significant for its biologically outstanding marine ecosystems. Harboring over 450 species of coral, a spectacular array of reef fish, and 22 species of marine mammals, its waters are a flourishing center of marine diversity. In recognition of its biological significance, WWF has identified the Sulu-Sulawesi Sea as a Global 200 ecoregion. The marine resources of the Sulu-Sulawesi Sea are critical to regional commercial fisheries and to the livelihoods of over 30 million coastal people. These seas also host significant populations of commercially important species including shrimp, tunas, and numerous species of reef fish. Collectively the marine resources of the Sulu-Sulawesi Sea support multi-billion dollar fishing industries and subsistence livelihood for millions of people.

A biological prioritization (Biological Vision Workshop) for the entire Sulu-Sulawesi, has reaffirmed the global importance of the SSME, by identifying over 40 High Priority Conservation Areas. This analysis is the first step to creating a comprehensive network of Marine Protected Areas to conserve a representative set of the important biotas, habitats, species, and ecosystem processes of the SSME. A rapid assessment survey from 1999 showed Bunaken National Park islands and the adjacent mainland in North Sulawesi, to harbor outstanding biodiversity features and is a clear regional conservation priority. Fortunately the reefs and fish stocks of Bunaken have suffered relatively little degradation by destructive and over-exploitative fishing practices. Given the heavy impacts observed elsewhere, Bunaken may be the main future source of recruits of certain key fish species for much of the surrounding area reinforcing the urgent need to focus significant resources on effective protection.

Tragically, these marine ecosystems and the natural resource base they support are under siege as human population growth, over-consumption, destructive fishing practices, poorly planned development, pollution, and insufficient conservation resources take their toll. The recent social strife in Indonesia has exacerbated regional marine resource degradation as economic urgencies force people into unsustainable exploitation. With a major portion of its economy based on marine products, long-term sustainability of these resources is a key to the economic recovery of Indonesia. In the face of urgent conservation priorities existing management efforts are not sufficient to protect priority marine resources. To respond to the severe and widespread threats facing the Sulu-Sulawesi Seas, WWF is developing a comprehensive collaborative conservation strategy to protect an ecologically representative network of sites.

A critical component of creating successful networks of protection is establishing effective conservation programs at key sites, or anchor sites, that can become learning and demonstration areas for broader marine conservation seascapes. The proposed project is aimed at immediately protecting three critical anchor sites by expanding successful models of multi-stakeholder

participation in protection efforts in the Sulu Sulawesi Seas. The project will pursue two major objectives:

1. To achieve effective conservation of critical anchor sites in El Nido (Philippines), Bunaken (Indonesia), and the Semporna Islands (Malaysia).
2. To magnify successful conservation action from anchor sites to broader conservation seascapes in Northern Palawan (Philippines), North Sulawesi (Indonesia) and the East Coast of Sabah (Malaysia).

Threats

Direct threats to the Sulu-Sulawesi Seas include:

Fisheries Issues:

- Overfishing; the majority of demersal and other near shore stocks are fully exploited over exploited.
- Destructive fishing: including the use of cyanide, blast fishing, muriami, and other destructive techniques.

Development Issues:

- Sedimentation from forestry and agriculture: is one of the single greatest threats to coastal reefs.
- Unsustainable clearing of mangroves: for coastal aquaculture and fuel wood.
- Harvesting of coral: for construction and building materials.
- Unsustainable coastal infrastructure development.

Capacity Issues:

- Limited capacity to manage marine systems: national and local level government as well as local people and NGOs have limited capacity to manage marine systems.
- Limited capacity for enforcement: which enables violations of regulations to continue.

Political Will and Local Support:

- Limited political will: resulting in a limited support for marine management.
- Limited local community and support for marine conservation.

FY 02 Accomplishments

Monitoring and Patrol

- The joint northern and southern patrol system involving 39 villagers, 14 rangers, and five water police officers was launched
- A multi-stakeholder patrolling system to protect the marine area of Bali Barat National Park has been in place since February 2002 as the result of stakeholder consultation.

Community Consultation

- Socialization of the conservation goals and laws governing sustainable use of marine resources in Bunaken National Park to approximately 30,000 villagers living within the park has made great progress with the active implementation of the patrol system.
- 30 village conservation information signboards have been installed around the park to inform villagers of conservation news, patrol activities, protected species and new zonation rules
- A sea turtle consensus building workshop with 62 participants representing government agencies, non-government organizations and academic institutions led to agreement on the need for a tri-national conservation program for sea turtle.

Sustainable Finance:

- The Bunaken entrance fee system collected a total \$41,000 in 9 months, capturing revenues from approximately 5000 foreign tourists from 39 countries and over 9000 local visitors.

Direct Impact Reduction:

- Complete cessation of blast fishing in the dynamite-plagued southern section of Bunaken National Park as a result of joint village patrol system.
- Significant reduction in the use of compressors and cyanide for capture of live reef fish after 5 major arrests and publicized court processing.
- Significant decreases in zonation violations with regard to spearfishing and gillnetting in tourism and strict conservation zones and with unregulated collection of live corals and beach sand for village construction.
- The release of captured endangered wildlife including two dugongs (a mother and calf), six green turtles and two hawksbill turtles.
- Apprehension and processing of illegal mangrove cutting operations (including probation and confiscation of chainsaws and illegally harvested wood).

Fisheries:

- Strong cooperation with provincial and district fisheries offices in implementing ban on commercial fishing within the Park.
- A one-year workplan for each country developed with 42 participants from Indonesia, the Philippines and Malaysia covering comprehensive updates.
-

Training:

- * A Code of Conduct (COC) for divers visiting Bali Barat National Park has been developed, through a series of meetings with dive operators that operate in the area.
- * Training on the spawning aggregation sites (SPAGS) of groupers was conducted for 15 participants from various agencies. In addition to increasing capacity to identify spawning aggregation sites, the training established a SPAGS monitoring team.
- * The first tri-national training on sea turtle biology and conservation was conducted for 26 participants from the three countries covering topics on species identification, nesting activities, census techniques, tagging and morphology, nesting beach management; safe turtle egg handling practices, hatchery management and ecotourism.

Project Expansion:

- * The existing management conservation plan operating in Bunaken including the patrolling mechanism was introduced to the Derawan isles. Derawan is slated to become a marine protected area in the near future.
- * At a Joint Management Committee (JMC) of the Turtle Islands Heritage Protected Area (TIHPA) WWF proposed the TIHPA be expanded to include Derawan Islands in order to pave the way for the development of a tri-national initiative on sea turtle conservation in the SSME. WWF was able to harness full support of government agencies, local NGOs and some members of the community in Derawan.

Project Activities

Goal: The ultimate goal of WWF's marine conservation program in the Sulu Sulawesi Sea is: To conserve the globally significant biodiversity of the Sulu-Sulawesi Seas by protecting networks of critical sites and magnifying conservation action in priority conservation seascapes.

Total level of Effort: \$ 525,000 (\$ 525,000 USAID)

Scaling up to a create network of conservation seascapes depends upon having successful conservation models and methodologies that can be demonstrated in anchor sites and then extended to adjacent areas within these seascapes. This effort is the centerpiece of WWF's ecoregional program for the Sulu-Sulawesi Sea. Priority seascapes for protecting the representative biodiversity of the SSME were identified at a WWF-sponsored Biodiversity Vision workshop. Areas of focus have been selected on the basis of conservation priority and the existence of anchor sites -- a park or series of sites where there is conservation potential and where WWF is currently achieving conservation and management success. These areas are Northern Palawan in the Philippines (El Nido anchor site), North Sulawesi in Indonesia (Bunaken National Park anchor site), and the East Coast of Sabah in Malaysia (Semporna anchor site).

The anchor site and seascape work will be the focus of WWF SSME program activities under the broad objective of protecting key sites and wildlife populations.

OBJECTIVE I: Effectively conserve critical anchor sites in El Nido, Northern Palawan (Philippines), Bunaken, North Sulawesi (Indonesia), and the Semporna Islands, East Coast of Sabah (Malaysia).

Level of Effort – \$ 262,500 (\$ 262,500 USAID; \$ 0 WWF Match)

Activity 1.1 Develop an effective El Nido Marine Environmental Protection Program, significantly reducing destructive activities and serving as a model for replication across Northern Palawan.

A pressing need in El Nido is strengthened protection of marine areas from destructive fishing practices (cyanide and dynamite) and intrusion of commercial fishers into municipal waters. In a workshop spearheaded by the municipal government and held in April 2001, a community-based marine patrolling plan for El Nido was drafted. The workshop was attended by the municipal and level local government units, Palawan Council for Sustainable Development, Department of Environment and Natural Resources- Protected Area Office, Philippine National Police, Philippine Coast Guard, NGOs, and the private sector (i.e. Ten Knots ecotourism company) – all of whom have pledged support to the patrolling effort. The patrolling plan is aimed at ensuring that the marine biodiversity and resources are protected from destructive activity and will support sustainable development of El Nido and adjacent areas.

USAID funds will support the implementation of the community-based Patrol Plan with the active participation of responsible agencies. The plan establishes three patrolling zones to be managed by three patrolling teams. Patrol teams are composed of local fishing community members and representatives of the Protected Area Office, Philippine National Police, Fish Wardens, Ten Knots Development Corporation and NGOs.

Implementation Activities:

1. Develop El Nido's community-based marine environment protection program and conduct regular patrols, surveillance and other marine protection activities that will protect the coral reefs and benefit the project stakeholders by increasing fish biomass.
2. Facilitate the signing of a formal Memorandum of Agreement among participating agencies and organizations that will implement the Marine Patrol Plan for El Nido.
3. Provide technical assistance and training programs such as deputation training for fish wardens, monitoring, marine enforcement and surveillance training, marine mammal stranding response and conservation management skills to build capacity of partner organizations including NGOs, people's organizations, and local communities.
4. Provide logistics support to implement the marine environment protection program (for example, fuel and engines for patrol boats, handheld and base radios, safety gear, first aid kits, photo-documentation tools like cameras and film, and cyanide detection kits).
5. Analyze, document, and apply ongoing lessons from marine protection and enforcement projects in Balayan Bay and Tubbataha Reefs.
6. Undertake a visual fish census twice a year.
7. Solicit feedback from local communities and participating agencies on the effectiveness of the marine enforcement and surveillance activities.
8. Prepare and disseminate information materials to local communities, partner agencies and organizations, tourists and visitors on the marine protection and enforcement program in El Nido.

Anticipated Outputs/Results Activity 1.1.:

1. A highly motivated, reliable, and participatory group of community-based marine law enforcers (*Bantay Dagat* or Coastal Sea Watchers) in El Nido.
2. Approximately 35,000 hectares of marine areas regularly and effectively patrolled in El Nido.

3. Coordination and interagency cooperation between and among local government units, and the Philippine National Police formalized in a Memorandum of Agreement.
4. At least 2 (i.e. one per year) fish visual censuses completed and reported.
5. Reported incidences of destructive fishing practices decrease significantly over a one year period and are fully eliminated within two to three years.
6. Local ordinances that promote marine conservation and protection are signed Enforcement boat and equipment are properly maintained to ensure continued use for marine patrol and rescue activities.
7. Coral reef monitoring activities in the park show less damage to coral reefs, increase in fish abundance, and other parameters over one year. Within three years, we expect to see very good progress in recovery of the natural community structure of this coral reef ecosystem as top and mid-level predators, species that are targeted for food and the recovery of the coral reef environment with the reduction in destructive activities.

Level of effort for Activity 1.1:

\$ 105,000 (\$ 105,000 USAID)

Activity 1.2: Develop effective management in Bunaken Park, as measured by the IUCN MPA management effectiveness guidelines, and document successful approaches for replication across North Sulawesi, Indonesia.

Three years ago, WWF Indonesia initiated conservation work in North Sulawesi, identified as a highest priority seascape at the SSME Biodiversity Vision Workshop. This work has focused on protecting the superb, high biodiversity reefs of Bunaken National Marine Park. WWF is working from a number of angles, including facilitating co-management arrangements with local park staff, strengthening patrols and enforcement of laws against destructive fishing practices and building capacity in monitoring resources.

Over the past year, with USAID support, WWF has worked with the Bunaken Park Management Board to enhance patrols in Bunaken and beyond. Collaborative management was enhanced through multi-stakeholder meetings on enforcement and conservation finance management, and local capacity built through support to a youth group (Tim Raja Laut) that successfully achieved NGO status.

While the focus of effort in Indonesia will be to extend successful efforts in Bunaken to other areas of North Sulawesi this project will support continuing and complementary activities in Bunaken itself. WWF's major partners in these activities are the Bunaken Park Authority, North Sulawesi Watersport Association (NSWA), North Sulawesi government, local NGOs (the Kelola Foundation, Tim Raja Laut), NRM Project officials, local leaders and the Dewan.

Implementation Activities:

1. Continue regular consultative meetings with partners and local government to strengthen collaborative management and patrolling efforts for protection of the park.
2. Conduct informational and awareness-raising activities for local judges to increase their capacity to handle illegal fishing cases.
3. Conduct training on reef monitoring for local groups (including Tim Raja Laut) to further build local capacity.
4. Provide technical assistance to the Bunaken Management Board on managing the existing entrance fee system.
5. Develop communication and outreach materials on the lessons learned from Bunaken park in order to magnify them to other priority conservation areas.

Anticipated Outputs/Results Activity 1.2:

1. Area under effective patrols doubled. Reported incidence of illegal activities within Bunaken Park reduced to zero (after 2-3 years).
2. Increased numbers of successful prosecutions of illegal fishers.
3. Local groups, including the Team Raja Laut youth group, demonstrate capacity to conduct reef surveys and interpret the data collected.
4. The capacity of Bunaken Management Board is increased to manage the entry fee system with transparency and design future effective management interventions for Bunaken.
5. Communication outreach materials for Bunaken are printed and circulated to potential replication sites in North Sulawesi.

Level of effort for Activity 1.2:

\$ 105,000 (\$ 105,000 USAID)

Activity 1.3: Semporna Islands gazetted as a marine park and serving as a model of conservation action for the East Coast of Sabah, Malaysia.

The east coast of Sabah has a total area of 23,262 km² of the state's coastal zone and is home to 54% of the state's total population. The region includes three highest priority seascapes, as identified in the SSME Biodiversity Vision: Kudat-Banggi, Trusan-Kinabatangan and the Semporna Peninsula. Sabah's largest areas of coral reefs are here, marine mammals and whale sharks are known to use the channel between Palawan (Philippines) and Kudat, and green and hawksbill turtles are abundant over much of the east coast.

WWF Malaysia has initiated a foundation for long-term marine conservation efforts in Sabah through its Marine Education and Awareness Program. The Program focused on fostering better understanding of marine biodiversity protection, increasing participation cooperation among stakeholders for conservation and advocating for the creation of more marine protected areas. These strategies support the Biodiversity Vision and are in line with the Sabah State government's Biodiversity Conservation Master Plan and Ecotourism Master Plan.

Building on its success in Semporna Islands, where the local community is now one of the stakeholder groups advocating park establishment, WWF will continue supporting the

gazettement process for the Semporna Islands Parks. This will involve on-site activities, enhancement of community awareness and participation in park management and identification of complementary economic opportunities. These efforts will then be documented for magnification and replication in the proposed Marudu Bay Marine Park, Kudat-Banggi, under Objective 2.

Implementation Activities:

1. Continue supporting advocacy efforts and dialogue between government and local communities at the current site for the proposed MPA on the east coast of Semporna Islands.
2. Assist in advocacy and awareness raising towards the establishment of the Semporna's Islands Park, Malaysia:
 - site meetings with Sabah Parks, District Office and fisheries agencies;
 - participation in a local community forum to develop awareness and economic opportunities for involvement in marine management;
3. Work with other government agencies not traditionally involved in conservation to raise awareness of the benefits of park establishment and those agencies' supporting role.

Anticipated Outputs/Results Activity 1.3:

1. Local community members participating in resource management at Semporna.
2. Establishment and successful operation of the community forum.
3. Proposals for community participation in marine resources management in the park prepared and submitted to relevant agencies (Ko-Nelayan fisheries co-operative, Ministry of Agriculture & Food).
4. Other local government agencies supporting park establishment and management and incorporating sustainable approach into development initiatives.

Level of effort for Activity 1.3:

\$ 52,500 (\$ 52,500 USAID)

List of key staff involved under Objective 1:

Romy Trono: Director SSME Program – based at WWF-Philippines

Luz Baskinas: Vice-President – WWF-Philippines

Filemon Romero: Director for Oceans and Coast – WWF-Philippines

Geoff Davison: Coordinator – WWF Sabah Marine Program: Coordinator for SSME

Ketut Sarjana Putra, WWF-Indonesia Office

Lida Pet Soede: Consultant to WWF-Indonesia

Boyke Lakaseru: WWF North Sulawesi Coordinator

Jenny Springer, Director Asia Pacific, WWF-US

Anita van Breda, Senior Program Officer Asia Pacific, WWF-US

OBJECTIVE II: Magnification of Conservation Action from Anchor Sites to broader Priority Conservation Areas.

Level of Effort – \$ 262,500 (\$ 262,500 USAID;\$ 0 WWF Match)

The work in all three countries will be strengthened by regular communication, learning exchanges, interaction to share experiences, and dissemination of lessons learned from the three seascapes. These exchanges will be conducted mainly through the Sulu Sulawesi Marine Ecoregion Conservation Program team and funded by WWF co-financing. The work in these three seascapes will be further complemented by on-going work in other areas (e.g. Anilao and Tubbataha) as well as ongoing efforts to address the overarching threats to the Sulu Sulawesi Sea as a whole including overfishing and destructive fishing, unsustainable development, and limited conservation capacity.

In the Philippines, WWF will focus on replicating the marine protection and enforcement program in El Nido to other municipalities in Northern Palawan. In addition, the program will work to facilitate collaborative conservation and resource management agreements between these two municipalities, as well as extension of the experience and lessons of these conservation efforts to other communities and stakeholders across the Northern Palawan seascape.

Activity 2.1: Establish a second anchor site in Taytay and develop a cooperative mechanism for a broader marine protection and enforcement program similar to El Nido's marine protection program.**Implementation Activities:**

1. Facilitate lateral transfer of knowledge and skills from El Nido communities successfully involved in conservation to communities in adjacent Taytay municipality, by holding workshops and trainings at key sites.
2. Hold meetings between the El Nido and Taytay marine protection and enforcement teams and cooperating agencies to draw up unified marine protection activities and share lessons learned.
3. Facilitate a Marine Protection and Enforcement Planning Workshop with Taytay area stakeholders.
4. Draft the Taytay Marine Enforcement Patrol Plan and secure local government approval and support.
5. Formalize a Memorandum of Understanding between the El Nido and Taytay municipalities and project stakeholders to identify collaborative activities pertaining to marine protection and enforcement program.
6. Process inputs of dialogues and consultations for the development of an education and communication strategy to encourage other municipalities in the Northern Palawan PCA to initiate similar activities for their marine areas.

Anticipated Outputs/Results Activity 2.1:

1. Approved Taytay Municipality Marine Protection and Enforcement Plan.
2. Approved Taytay Marine Law Enforcement Manual.

3. Logs of pilot patrol activities.
4. Communication exchanges among key stakeholders in the two anchor sites of the Northern Palawan Priority Conservation Area.
5. A local ordinance establishing the Taytay Municipality Marine Protection Program and other ordinances supporting marine protection are adopted.
6. A Memorandum of Understanding/Agreement between the El Nido and Taytay municipal governments on strengthened marine protection and enforcement and identification of interagency and intermunicipality cooperation and Information, Education, and Communications materials increase understanding of the coastal communities and motivate them to take actions to protect the marine environment.

Level of effort for Activity 2.1:

\$ 105,000 (USAID: \$ 105,000; \$ 0 WWF Match:)

Activity 2.2: Develop conservation strategy for North Sulawesi, including integration of tourism development plans. Test sustainable financing mechanisms in Bunaken extending across North Sulawesi.

Following the WWF-sponsored Biodiversity Vision workshop in March 2001, the government of Indonesia requested WWF to facilitate regional conservation planning for both North Sulawesi and East Kalimantan priority seascapes, in order to integrate conservation considerations into anticipated development in the region. With support from USAID, WWF proposes to facilitate development of a regional conservation strategy for North Sulawesi. The launching of the “Sustainable Beyond Bali Eco-Tourism” initiative in Bali has implications for North Sulawesi as Bunaken and other marine sites are promising sites for expanded nature-based tourism. Therefore, the N Sulawesi conservation planning process will include consideration of how the benefits of expanded tourism may be tapped without negative impacts to the marine environment.

WWF will also pursue a sustainable financing mechanism for nature conservation in the province, by expanding the current entrance fee system in Bunaken Park to two other nature tourist destinations in the North Sulawesi (Tangkoko Reserve and Lembeh Strait). A province-wide initiative would avoid the establishment of different entrance fee standards, resulting in confusion for tourists, while generating additional revenue for conservation.

Implementation Activities:

1. Facilitate a North Sulawesi Province Conservation Planning Workshop involving the government of North Sulawesi (Manado, Tangkoko, Bitung, Sangir Talaud), Bunaken Management Board, NGOs and project offices (WCS, NRM, CRMP, Kelola, Tim Raja Laut), the private sector (mining, fisheries, tourism and watersports companies) and local community representatives and opinion leaders.
2. Work with local partners in North Sulawesi to ensure that the anticipated expansion of tourism to the region under the “Beyond Bali Ecotourism” initiative is sustainable.

3. Conduct a workshop for North Sulawesi to review and discuss the existing entrance fee system in Bunaken and seek its expansion to cover the entire province.
4. Conduct serial meetings and dialogues with key target groups and partners to communicate successful conservation actions (for example: law enforcement on illegal fishing) done in the anchor site, to foster replication at additional sites and wider public support for regional conservation action.
5. Design, print and circulate compelling media campaign materials that will lead to increasing public support for the protection of flagship and critical species, as well as fishery resources in the region.

Anticipated Outputs/Results Activity 2.2:

1. Marine Conservation Action Plan for marine and coastal areas of North Sulawesi Province (covering Bunaken, Tangkoko, Lembah straits, Sangir & Talaud).
2. Bali Tourism Board agree to support nature based tourism development in North Sulawesi
3. Workshop on a coordinated conservation finance scheme for North Sulawesi Province.
4. Stakeholders from other sites participate in meetings and request information on successful conservation actions in Bunaken
5. Materials printed and disseminated.

Level of effort for Activity 2.2:

\$ 105,000 (USAID: \$ 105,000; \$ 0 WWF Match:)

Activity 2.3. Identify network of critical conservation sites in the East Coast of Sabah and initiate measures to create and support new protected areas.

In Malaysia, many marine protected areas have been established, but few of these are in Sabah where marine resources are richest. Therefore, the main focus of this activity is identifying sites for the creation of new protected or well-managed areas, and advocacy for the establishment of these areas. Site identification will be done primarily through analysis of important sites for the conservation of marine mammals, whale sharks and turtles, since data on these marine species is currently more limited than data on coral reefs.

Implementation activities:

1. Undertake a reconnaissance survey and mapping of the target species: marine mammals, whale sharks, green and hawksbill turtles.
2. Assess the conservation and economic importance of the target species.
3. Develop a long-term conservation strategy and action plan based on the anchor sites, and incorporating needs of marine mammals, whale sharks and turtles.
4. Replicate advocacy efforts on marine protected area establishment in other areas in East Coast Sabah, such as the proposed Marudu Bay Marine Park (Kudat-Banggi) and Darvel

Bay (Trusan-Kinabatangan), through production of materials and participation in planning meetings.

5. Develop a feasibility plan to establish a trust fund for conservation efforts (including new protected areas) in Sabah, Malaysia.
6. Identify site conservation partners from the public and private sector with a view to creating alternative conservation financing sources.

Anticipated Outputs/Results Activity 2.3:

1. Up-dated baseline information regarding distribution, numbers and movements of target species, including maps.
2. Role of anchor sites in conservation of these species defined.
3. Needs of marine mammals, whale sharks and turtles incorporated into Conservation and Action Plans for additional sites.
4. Proposals developed for establishment of marine protected areas in Marudu Bay and Darvel Bay.
5. Effective collaboration with University Malaysia Sabah, Greenforce, Ministry of Tourism Development and other stakeholders in proposed protected and managed areas on the east coast.
6. Awareness and advocacy materials developed.
7. Feasibility plan prepared for implementation of a conservation trust fund to benefit marine protected areas in Sabah, Malaysia.
8. Alternative financing sources identified and relevant partnerships established.
9. Communication and advocacy strategy developed in support of marine protected areas establishment on the east coast of Sabah, Malaysia.

Level of effort for Activity 2.3:

\$ 52,500 (USAID: \$ 52,500; \$ 0 WWF Match:)

List of key staff involved under Objective II:

Romy Trono: Director SSME Program – based at WWF-Philippines

Luz Baskinas: Vice-President – WWF-Philippines

Filemon Romero : Director for Oceans and Coast – WWF-Philippines

Geoff Davison: Coordinator – WWF Sabah Marine Program: Coordinator for SSME

Ketut Sarjana Putra, WWF-Indonesia Office

Lida Pet Soede: Consultant to WWF-Indonesia

Boyke Lakaseru: WWF North Sulawesi Coordinator

Jenny Springer, Director Asia Pacific, WWF-US

Anita van Breda, Senior Program Officer Asia Pacific, WWF-US

Please note the following summary presents objectives and activities carried over from FY02. Levels of effort are not included as these objectives and activities are funded with FY02 funds. Please see approved FY02 implementation plan for full details.

Objective III: Enhancing conservation action and improving fisheries management in Bunaken National Marine Park and the surrounding area

Activity 3.1: Environmentally sound, science-based management and monitoring of fish stocks and indicator species in Bunaken National Park:

Key Implementation Activities:

1. Training in fish stock monitoring techniques.
2. Collection of baseline data on underwater fish..
3. Training in fish spawning aggregation sites (SPAGS) set up and monitoring.

Anticipated Key Outputs/Results Activity 3.1:

1. Statistically significant increases in fish biomass at monitoring sites where management interventions have been successful
2. Monitoring according to a systematic plan and verified through project staff review
3. Local NGOs and individuals trained in monitoring fish catch data, and able to communicate trends in fisheries yields to local communities

Activity 3.2: Expansion of patrolling and enforcement within Bunaken National Marine Park and adjacent areas:

Key Implementation Activities:

1. Direct action grant to the appropriate patrol groups for regular patrols on the park border
2. Enhance “Team Raja Laut” capacity to transfer information on destructive coastal fisheries activities to the youth in the park
3. Train youth group members to recognize destructive fishing activities under water and set up reporting system to the authority through Reef Check Activity

Anticipated Key Outputs/Results Activity 3.2:

1. Weekly enforcement patrols.
2. Significant decrease in destructive fishing activities in areas with regular patrols as measured by data collected by patrol teams and observations of Team Raja Laut
3. Weekly youth group monitoring of destructive activities in the majority of the park’s islands.

Objective IV: Enhancing the sustainability of conservation action by creating and expanding long-term financing mechanisms***Activity 4.1: Develop sustainable conservation financing mechanisms:***

Key Implementation Activities:

1. Review legislation to identify obstacles and opportunities for conservation finance,
2. Research “willingness to pay” and investigate other innovative revenue generation schemes,
3. Consultative identification of best institutional regimes for collecting and disbursing funds,
4. Develop mechanisms including conservation fees, tourism fees, landing taxes, trust funds and other mechanisms for the generation and management of conservation funds.

Anticipated Key Outputs/Results Activity 4.1:

1. Obstacles/Opportunities for conservation finance identified from assessment of policies and activities,
2. Estimates for standardizing user fees rates from various ecotourism initiatives across the country,
3. Establishment of functioning sustainable finance mechanisms for at least three sites.

Activity 4.2: Institutionalization of effective management of conservation funds:

Key Implementation activities:

1. Train key institutions in conservation financing
2. Produce a conservation finance workbook / training manual
3. Advocate use of conservation finance approaches at priority conservation areas

Anticipated Key Outputs/Results Activity 4.2:

1. Develop multi-stakeholder body to manage conservation funds
2. Orientation training workshop and meeting held to benefit staff of the local government, NGOs, and community organizations in conservation financing in each site
3. Policy position papers on conservation finance regulations drafted and advocated to relevant decision makers

Other Specific Program Details

Monitoring and Evaluation:

On-site teams led by a WWF project manager and supported by technical staff will carry out project activities in Northern Palawan, North Sulawesi and Sabah. These teams will also be responsible for monitoring to track the project's direction, progress and results. Monitoring will be done quarterly, in close collaboration with local partners.

A detailed participatory monitoring plan will be prepared for each component of the project, based on the activities and performance indicators described in this proposal. Baseline conditions will be established, and the activities and indicators further elaborated into targets, activities and milestones for quarterly reporting. Staff workplans will be set to implement these. Progress relative to the project plan and individual workplans will be reviewed and adapted as needed on a quarterly basis. The overall plan will be fully reviewed a minimum of once a year; annual reviews will be conducted jointly by WWF Philippines, WWF Malaysia, WWF Indonesia and WWF US.

Wherever possible, performance indicators will be quantified or physically measured, for example, numbers of patrols conducted, number of apprehensions of illegal fishers, estimates of damage to corals, changes in fish stocks and other changes in ecological parameters. WWF has developed systems for monitoring biophysical impacts in field sites, as demonstrated in Anilao and Tubbataha. The monitoring system will also include process documentation so that processes leading to the successful attainment of targets are properly observed and recorded for institutional learning and replication in other sites and by other organizations.

Financial Sustainability

New USAID funding will enable WWF to employ a full time person to focus on setting up sustainable financing mechanisms and establish institutional arrangements to ensure financing and conservation sustainability.

Specific activities for this component are detailed in FY 02-implementation plan.

Gender Issues

Currently, WWF does not have plans to become directly engaged in gender-related strategies or activities. To the extent possible and appropriate WWF seeks to include both men and women in project activities, although we recognize that gender balance is not necessarily gender equity. Therefore as funding allows we will continue to pursue the development of partnerships with organizations that specialize in these areas.

Environmental Education & Communication

Specific progress in environment education activities includes success with Earth Day activities in Nunaken National Park. 170 students from secondary schools and 34 teachers from Manado, Minahasa and the Bunaken National Park engaged in environmental education through a field trip to the Bunaken National Park.

Education, outreach, and communications are on going with stakeholders at multiple including local park managers, local people, and dive operators. Signage boards in and around Bunaken serve as a public focal point for communication and education material.

Outreach and environmental education materials are being provided to dive operators and dive tourists to help them mitigate against negative impacts on reefs and increase their positive contribution to reef conservation. Additionally manuals are currently being developed to guide tourism industry participants through self-evaluation procedures to help them upgrade their operations to best practice standards. A strong emphasis will be given to communications outputs such as posters and maps that will assist park staff in educating visitors and park users about the rules and regulations, as well as providing information on protected species.

WWF is also training youth group members to recognize destructive fishing activities and set up reporting system to enable rapid reporting of offences to appropriate enforcement officer. This citizen based monitoring of illegal activities has been a key to decreased their regularity and will be expand to new areas of the park.

Reef-Check and Reef Clean Up have extensive media coverage successfully communicating progress towards conservation in and the priority areas.

Travel

Travels associated with **Objectives 4.3 and 4.4** are as follows:

Other:

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
Senior Program Officer	U.S.	Manila	2	
Director	U.S.	Manila	2	

Terai Arc Landscape

Project Overview

Description of site

The Terai Arc spans an area of approximately 49,500 square kilometers, covering dense forests and tall grasslands along the southern slopes of the Himalayas. The Terai is fed by the watershed of the Churia foothills and extends along the border between India and Nepal. It has forests of soaring Sal trees, grasslands that grow as high as twenty-three feet, and is home to some of the world's most remarkable and diverse species. The Terai is a top-priority landscape for tigers and one of the three highest tiger density regions in Asia at a time when less than 8,000 tigers are left in the wild. The Terai is also inhabited by the second largest one-horned rhinoceros population in the world, numbering more than 600 and has 6 different isolated populations of Asian elephants totaling almost 500. These umbrella species face an array of threats, ranging from genetic isolation to poaching and wildlife trade that will lead to irreversible losses if left unchecked. Ultimately, many of these threats also jeopardize the livelihoods of communities in the region who rely on the natural products and ecological services of the Terai for their livelihoods.

In order to resolve these conflicts and tackle the threats successfully, we have developed a landscape vision of conservation and development that fully incorporates the interests of people as well as wildlife on a sustainable and long-term scale.

This document is prepared for the Nepalese section of the Terai Arc, which extends from Bagmati River in the east to Mahakali River in the west. The Terai Arc planning was carried out jointly with WWF India but implementation is taking place on a national level. The Terai region provides the majority of the country's demand for timber and other forest products. Moreover, the Terai is the rice bowl of the country and one of the most fertile agricultural regions in Nepal. Sustainable management of the Terai will not only conserve biological diversity but will also prevent soil erosion, flash floods, and declining water tables, all of which are necessary for the well-being of local people in the region.

Threats

The ecological landscape of the Terai is faced with an array of immediate threats endangering the very existence of its wildlife species and habitat. Not only are the long-term viability of wildlife species and its habitat at stake but also the sustainable future livelihood of local communities. The most pressing of these threats are habitat loss and fragmentation, prey depletion, poaching, wildlife trade, human/wildlife conflicts, and revenge killings. At the root of these threats lie the problems of population growth and poverty.

Population Growth and Poverty

The sharp increase in population combined with increasing impoverishment lies at the root of the other threats facing both wildlife and people in the Terai. The Terai supports a human

population of more than 6 million people, which will have doubled in another 50 years if left unchecked. Moreover, in-migration from the hills into the region continues unabated leading to illegal settlement within the national forests. Agricultural demands are already high, and bound to increase with the rise in population and poverty, resulting in growing pressure on habitat and wildlife.

Habitat Loss and Fragmentation

Habitat loss and fragmentation of forest cover is caused primarily by encroachment and clearing of forest areas by illegal settlers through over-harvesting of forest products, which includes everything from illegal timber felling, cutting wood for cooking fuel, stripping grass for roofing and other household purposes, and over-grazing livestock in the forest under story.

Environmental Degradation

Over-harvesting of forest products leads to flooding, landslides, and soil erosion and the decrease in soil productivity. Irrigation waters that once flowed from foothill forests dry up as forests are denuded, lessening water for crop cultivation and food production, hence increasing impoverished conditions in the region. In the forests and grasslands, both the quality and quantity of food decreases as waterholes dry up and siltation increases. Prey species are left without much to feed on and predators are left without healthy prey. This results in fierce competition among wildlife for food and water, resulting in population decline.

Human/wildlife Conflict

Environmental degradation means that wildlife foray into fields and inhabited areas. Conflict between humans and wildlife takes many forms in the Terai Arc, and generally involves crop damage by wild herbivores and predation of livestock by wild carnivores. The most serious include incidents such as elephants destroying a poor farmer's entire season of crops in one evening's visit or a tiger killing a family's only milk cow or even people. Predictably, people retaliate by poisoning and hunting them down.

Poaching

The damage done by poaching consists of the illegal extraction of wild endangered animals and plants from both inside and outside protected areas. Poaching is practiced mainly for monetary benefits rather than for immediate survival. Poaching includes crimes such as killing globally endangered species like rhinos for their horn, elephants for their tusks and tigers for their bones and skins, and taking endangered and protected medicinal plant species, all of which are in great commercial demand in illegal international markets outside Nepal.

Proposed Response

The Terai Arc Landscape program proposes to restore and maintain wildlife corridors linking 11 protected areas between Nepal's Parsa Wildlife Reserve and India's Rajaji National Park.⁵ Forests connecting these protected areas are in various stages of degradation and fragmentation due to human population and poverty pressures. Restoring wildlife corridors will facilitate the dispersal and genetic exchange of wildlife populations and ensure the long-term survival of key endangered species. Moreover, sustainable management of these corridors as well as ecological services in the landscape will prevent soil erosion, flash floods, and declining water tables, all of which are necessary for the well being of local communities.

Making the Terai Arc vision a reality requires working on a community level through strategies such as community forestry, capacity building, alternative income generating activities, park-revenue sharing, gender mainstreaming, and awareness building. Past experiences in the Himalayas have proven that conservation cannot be achieved without people's participation and more importantly, long-term conservation cannot be guaranteed unless local communities are thriving.

And, making the Terai Arc Landscape vision come to life calls for not only full participation of local stakeholders, government agencies, non-governmental organizations, foundations, and donors, but also close collaboration amongst partner organizations working in the field. TAL activities related to core protected areas and forest restoration areas outside protected areas will be implemented by the two relevant government agencies; the Department of Forests (DoF), and the Department of National Parks and Wildlife Conservation (DNPWC). Other implementing agencies active in community development and wildlife corridors include national level NGOs such as King Mahendra Trust for Nature Conservation (KMTNC), Women in Environment, Environmental Camp for Conservation Awareness (ECCA), buffer zone councils, village development committees, local user groups, coordination committees and community based organizations including women's groups. International government agencies such as USAID, DFID and SNV are also working in the landscape along with organizations like CARE and UNDP. The Terai Arc Landscape has already garnered full support from SNV, which has signed an MOU with WWF and WWF is currently in discussion with DFID and UNDP on working together towards a vision of an integrated Terai landscape. The Terai team also works closely with EFEA (Environment and Forest Enterprises Activity) in Dang district, which is supported by USAID and implemented through CARE Nepal. WWF Nepal communicates closely with the EFEA coordinator and CARE project manager so as to coordinate activities and implement project activities through the Community Forestry User Groups (CFUGs) and Community Forest Coordination Committees (CFCCs) formed through EFEA.

A strategic planning exercise is being carried out with guidance from large program management experts from the private sector in identifying organizational capacities of WWF and potential partners, developing tools of collaboration with stakeholders and donor agencies, and preparing of a financial plan. In order to ensure coordination and cooperation working in the Terai

⁵ The Terai Arc covers an area of 49,500 square kilometers, connecting the protected areas of Royal Chitwan National Park, Parsa Wildlife Reserve, Royal Bardia National Park, and Royal Suklaphanta National Park in Nepal and Corbett National Park, Rajaji National Park, Sonanadi Wildlife Sanctuary, Kishanpur Wildlife Sanctuary, Dudwa National park, Katarniaghat Wildlife Sanctuary and Valmikinagar Wildlife Sanctuary in India.

Landscape, WWF has held meetings and workshops to share its operational plans and will hold another workshop this fall to invite endorsement of the TAL vision.

The following map illustrates the vision of Terai Arc Landscape, showing the corridors and bottlenecks that WWF is currently focusing on.

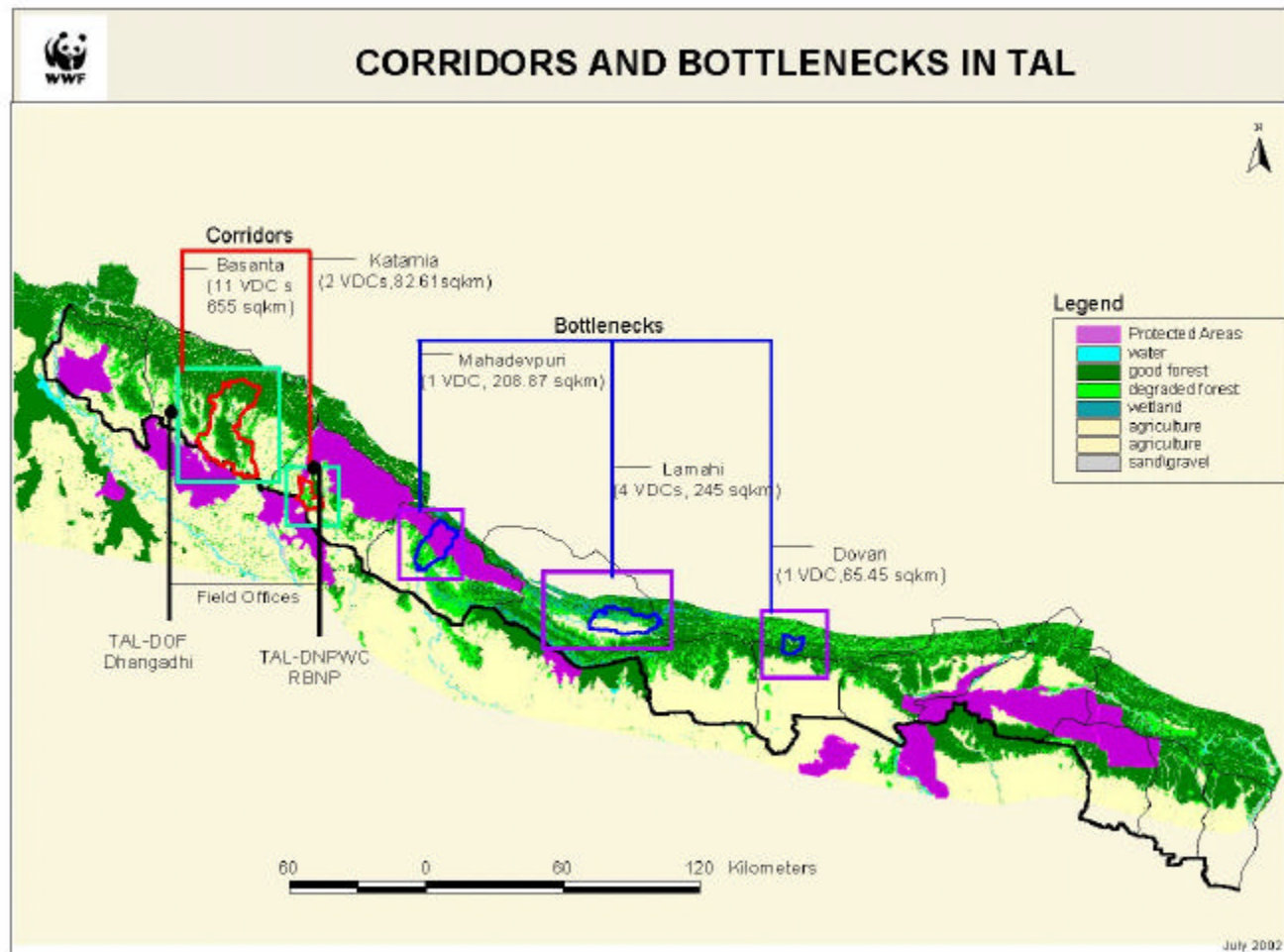


Figure 1. Corridors and Bottlenecks in the Terai Arc Landscape

In this second year, WWF will continue its work in the three corridors: Kanchanpur-Bardia-Chitwan corridor, Bardia-Katarniaghat corridor, and Basanta corridor. These corridors link protected areas in Nepal and India where immediate intervention is required in order to put a halt to what will otherwise be irreversible breaks in the landscape. If fragmentation continues at present rates in these three corridors, the Terai Landscape vision cannot be brought to life.

Kanchanpur-Bardia-Chitwan corridor: this corridor begins at Brahmdev forest at the brink of the Indo-Nepal international boundary and runs along the foothills of the Churia hills, from east to west of Royal Suklaphanta Wildlife Reserve, to Royal Bardia National Park and Royal Chitwan National Park and finally, Parsa Wildlife Reserve.

Bardia-Katarniaghat corridor: this corridor will connect Royal Bardia National Park (Nepal) with Katarniaghat Wildlife Sanctuary of India.

Basanta corridor: this corridor will connect Dudwa National Park, India with Royal Suklaphanta Wildlife Reserve, Nepal through the forests in the Churia foothills.

These three priority corridors were selected subsequent to satellite data analysis from 2000 and following field verification studies (Joshi, 2000; Yonzon, 2001). Bottlenecks in the Kanchanpur-Bardia-Chitwan corridor: Mahadevpuri, Lamahi, and Dovan bottleneck, as well as Bardia-Katarniaghat corridor and Basanta corridor add up to a total of 5 sites that require immediate intervention. Accordingly, these are the five pilot sites selected for initial work by WWF in the Terai Landscape. WWF plans to develop these proposed corridors into fully functional trans-boundary forest corridors within the next 15 years and will monitor them for another 15 years in partnership with its conservation partners.

FY 02 Accomplishments

The Terai Arc Landscape (TAL) Program in Nepal was initiated in July 2001 by WWF Nepal program. A number of strategic steps were taken in this first year of the program:

Critical GIS baseline data on landscape topography and ecological conditions were gathered and digitized, which was enhanced by the signing of an MOU in January of 2002 between ICIMOD (International Centre for Integrated Mountain Development) and WWF Nepal to establish a system for GIS information exchange between the two organizations.

Thirteen nurseries, including two agro-forestry nurseries, producing 330,000 mixed seedlings, were established as natural regeneration plots in the two main corridors. The seedlings were planted in community forestlands by August 2002.

Anti-poaching efforts were strengthened and initiated in the critical forest corridors with the establishment of three community based anti-poaching units. The establishment of two field offices in Bardia and Dhangadi enhanced joint implementation and coordination of program activities by the Department of Forests (DoF) and WWF Nepal in forest corridors, Department of National Parks and Wildlife Conservation (DNPWC) and WWF Nepal in protected areas.

Focus on communities was given great emphasis and consisted of healthcare initiatives provided to more than 7,000 people, provision of safe drinking water through 197 tube well constructions, literacy classes for 275 livestock herders, alternative energy programs with installations of 1,147 improved cooking stoves, and income generation opportunities through distribution of poultry and various trainings.

Community forest user groups were created and strengthened to effectively manage forests in various corridors; five community forests have been handed over to local communities, operational plans for four community forest user groups were prepared, and 26 user group constitutions prepared and registered in district forest areas. People's participation in the user groups was emphasized in the drawing up of coordination committees and operational plans.

Environmental education was expanded through the formation of 39 new eco-clubs, distribution of 30 environmental education kits, and activities such as street theaters and conservation events.

Through the generous support of USAID, the third Transboundary Consultative meeting on Biodiversity Conservation between Nepal and India was held in Kathmandu from September 13-15, 2002. WWF Nepal facilitated the workshop and participants from India included Mr. SC Sharma of Ministry of Environment, Delhi, staff from Indian Embassy in Nepal, Chief conservator of forests from three bordering states Uttar Pradesh, Bihar and West Bengal as well as three WWF India representatives. Nepalese participants included representatives from Ministry of Forest, Department of Forests, National Parks Dept, various park wardens, and WWF Nepal staff. The delegates signed a resolution to coordinate activities from both countries on TAL and set up a joint committee to monitor progress on regular basis.

Project Activities

The problems facing conservation efforts in the Terai are linked irrevocably to the negative impacts from high levels of population growth and poverty in the region. Local populations without alternative means of income have little choice but to over-use natural resources in order to meet their subsistence needs. Not only do such practices lead to biodiversity loss and environmental degradation but also further impoverishment as their only valuable resource continues to shrink. Thus, it is essential to ensure the immediate protection of wildlife species and their habitat while simultaneously providing local communities with means for their well being. Communities that live on a subsistence agriculture level rely on forests and natural resources to supplement their livelihoods. Prior experience in the Himalayas has proven that providing sustainable sources of income and improving their livelihoods inevitably results in less human pressure on wildlife populations and natural resources since community needs are now met elsewhere. Accordingly, WWF's objective of restoring forest corridors in the Terai calls for a strategy that combines forestry management and community development efforts.

According to Census figures that were released in September 2002, the combined population of the Terai Arc is now estimated to be more than 6 million with a rough average growth rate of 3.10% per year. The sheer scale of these figures has led us to reevaluate our approach, applying greater emphasis to large-scale management planning and strengthening partnerships with key development agencies in TAL. While WWF's long term strategy is to improve the livelihoods of local communities and provide people with education, access to community services, and economic opportunities, we are addressing the population issue through activities that improve reproductive health and decrease birth rates in the fourteen districts that make up TAL. These activities include improving access to birth control methods and education. Moreover, WWF has recently taken on rigorous research on sustainable livelihoods that will determine the most effective intervention points to address these root causes. Finally, WWF is discussing lobbying to influence national policy on migration laws and resettlement policies so as to discourage immigration from the hills and prevent politicians from inviting people into these districts as a means of creating voting blocs for themselves.

Given the current political unrest in Nepal, and various confrontations between the army and the Maoists in Bardia and Kailali, certain activities planned for the first year were delayed and will be carried out later in this year. For example, a successful field level planning workshop was held in Royal Bardia National Park and Royal Chitwan National Park to prepare the agenda for the forthcoming transboundary meeting between Indian and Nepali government delegates in Katmandu. However, the transboundary meeting was postponed twice due to security constraints and took place only recently on September 13 – 15 of this year. Similarly, in the development of a regional-level anti-poaching plan was delayed and will be carried out in FY03. Funds allocated for this purpose in FY02 were instead used for the Anti-poaching Strategy Meeting held in Chitwan in February 2002 and strengthening of anti-poaching units.

Addressing gender equity issues are critical for success in the Terai and are therefore integrated throughout the planning and implementation. Program activities in the pilot sites focus particularly on women as a key stakeholder group in conservation and sustainable development. Activities will focus on increasing women's participation in the arenas of policy formation, decision making in natural resource utilization and management, forestry activities and sustainable community programs. Activities will include capacity building through literacy programs, income generating activities, skill development training, female student scholarships, group management and leadership training for women. Interactive mass meetings, extension programs, street theater and contests that target women will be used to raise awareness. The program will help develop economic activities, working with women on income generation plans, saving-credit programs, micro-enterprise development and forest product marketing. Since community participation, gender empowerment, and sustainable development are all crosscutting variables, these themes are applied to all activities during the planning and implementation of the pilot projects.

Total Level of Effort: \$458,449 (200,00 USAID, \$258,449 WWF Match)

Program Objective:

Restoration of key wildlife corridors linking protected areas in the Terai

Program Activities:

1. Program Coordination
2. Forest Regeneration
3. Community Forestry
4. Sustainable Livelihoods (Community Development)
5. Anti-poaching Activities
6. Improved Management of Protected Areas
7. Education, Communication and Coordination
8. Research and Monitoring

These activities will build on the foundation laid during the program's first year and are measures designed to counteract the current endangerment and long term threats to wildlife species and habitat as well as socio-economic threats. The root causes of these threats,

population growth and poverty will be addressed both directly and indirectly in context of social realities. Accordingly, project activities will seek to help communities meet locally defined needs, ensuring that people's livelihoods are improved through environmentally sustainable activities.

Given the scale of the project, many of these activities can be carried out only through support from multiple donors. Accordingly, several of the activities discussed below have additional funding sources, for e.g., Community Forestry and USAID funds will be applied towards activities that are critical for the larger success of TAL and cannot be accomplished without these funds.

Objective I: Coordinate and Facilitate Terai Arc Landscape Management

Level of Effort for Objective I: \$42,000 (\$7,000 USAID; \$35,000 WWF Match)

The coming year reflects a shift in strategy for the Terai Arc Landscape towards a more coordinated large-scale management approach. A program officer based in Washington DC will provide coordination of the many different elements involved in a project as large as TAL. This includes coordination of communication, grant making, monitoring, evaluation and reporting.

Objective II: Achieve Forest Regeneration

Level of Effort for Objective II: \$72,703 (\$22,697 USAID; \$50,006 WWF Match)

There are two components to forest regeneration; enhancing natural regeneration in forested lands and planting seedlings in barren lands. WWF worked on two corridors in the first year, rehabilitating 536 ha of degraded forest land till date and will expand restoration activities in these corridors this year. Activities include establishing 10 nurseries of mixed tree species seedlings to produce 360,000 seedlings that will later be planted in 180 ha of fallow community land. Forest restoration activities also include the establishing of natural regeneration plots covering 250 ha of degraded forest land through fencing and protection from free grazing in participation with government and local communities. These activities will be carried out in corridor and bottleneck areas and the proposed buffer zone area of Royal Suklaphanta Wildlife Reserve.

Anticipated Outputs/ Results for Objective II:

- 360,000 mixed tree species seedlings produced for plantations in the bottleneck and corridors by July 2003.
- Forest coverage of 430 ha community fallow land and government degraded forestlands restored.

Level of Effort for Objective II:

\$ 22,697 USAID

Objective III: Form and Strengthen Community Forest User Groups

Level of Effort for Objective II: \$8,595 (\$8,595 USAID; Unconfirmed WWF Match)

Community forestry is a crucial component of WWF's strategy in the Terai Arc. It reinforces the direct restoration of wildlife corridors and leads to long-term conservation by increasing community ownership of local forests and habitats and by establishing safeguards leading to sustainable and systematic use of natural resources. Evidence from other programs in the Terai such as EFEA and Biodiversity Support Program shows that community forests foster the restoration of plant and animal habitat, leading to the return of species not observed for years. In order to address the threat of habitat loss and fragmentation, the program will utilize a community forestry approach in collaboration with local resource users, returning forest areas from government to local management control. This approach will provide local communities with a mechanism to better secure the tenure they need to protect the forest resource base, which in turn provides for local livelihoods by meeting subsistence and income generating needs. The Program will assess the demand for forest products to facilitate sustainable and profitable trade that will be in the hands of local communities. This undertaking will be based on rules and regulations developed and sanctioned by the State, and forest management plans developed and implemented by local communities, with guidance from forest officials and WWF field staff, to include conservation as well as sustainable use objectives.

A critical component of community forestry is the formation and strengthening of management capacity of community forest user groups. Effective management of community forests can be achieved only when user groups and implementing agencies have full management and operating capacity. Forests outside protected areas or buffer zones are either managed by the government or handed over to the community as community forests or leasehold forests. Therefore, TAL activities will continue to collaborate with District Forest Offices to identify degraded lands and forests used by local communities. Following the first year's achievements, WWF will apply USAID funding to assist local communities to develop operational plans for community forests and disseminate CFUG guidelines and operations amongst newly formed user groups and where forests are yet to be handed over. We will expand field level awareness programs to mobilize local communities to form and institutionalize forest user's groups, particularly women stakeholders.

Anticipated Outputs/ Results for Objective III:

- 40 Community Forest User Groups institutionalized by end of FY03.
- 26 operational plans developed for community forests in Basanta, Katarnia and Lamahi.
- 20 Community Forests handed over to local communities by July 2003.
- Increased empowerment of and participation from CFUGs in the local communities.

Level of Effort for Objective III:

\$8,595 USAID

Objective IV: Enhance Sustainable Livelihoods

Level of Effort for Objective IV: \$73,838 (\$64,699 USAID; \$9,139 WWF Match)

WWF's approach in the Terai Arc focuses on providing benefits to the local communities and enhancing their livelihoods. The successful model from the Annapurna project and Bardia Integrated Conservation Project (BICP) showed us that dependency on natural resources by local people lessen when their immediate livelihood needs are met. Building on this principle, TAL proposes to help provide local communities with necessities such as education facilities, health units, safe drinking water, and income generation activities. Furthermore, while community forestry has been successful in Nepal as a means of achieving conservation goals, long-term success cannot be guaranteed given changes in external factors such as national policy. A more profound transformation needs to take place where local people equate their well being with a sustainable and conservation oriented livelihood. Thus, motivating people into ownership of sustainable livelihoods is as critical as encouraging participation in forestry programs.

Taking up on the first year's focus, WWF will expand women's access to health care, family planning services, education and income generating activities. TAL aims to overcome gender inequities that have stifled women's voices in community and economic decisions and prevented their full participation. WWF has developed the *Successful Communities Model* through the support of Summit Foundation and will apply it within the Terai Landscape as feasible. WWF will continue to work with pilot communities inside the 5 core conservation areas to develop income-generating programs, such as low interest rural credit systems, build on eco-tourism opportunities, handicraft production, and vegetable and fruit tree cultivation to provide local people with incentives to support conservation efforts and encourage local stewardship of natural resources.

Activity 4.1: Identify and initiate meeting locally defined needs in the Basanta and Katarniaghat corridors

The success of landscape level conservation programs depends on the cooperation of local communities. However, unless local people see immediate benefits from conservation and community programs, they are not going to participate actively in conservation efforts. Thus, TAL activities must improve living conditions of communities while decreasing their dependence on forests and natural resources. For this purpose, locally defined needs must be identified and met. In the first year of the project, pilot community development sites were identified and locally defined priorities were set. Thus, activities for this year include providing health, education, safe drinking water, and sanitation services in nine sites. Income generating activities such as poultry and pig farming will be continued with a greater focus on livestock improvement and veterinary support. Lessons learned from the first year established that veterinary support is crucial to improved livestock husbandry practices, providing incentive for investment in improved livestock, and ultimately helping decrease open grazing in forestlands. New income generating activities include plantation of 60,000 non-timber forest product (NTFP) seedlings of cinnamon, cane, and fruit trees such as banana and mango. Agro-forestry will be promoted through the establishing of demonstration plots and provision of training. With women

as a key stakeholder in sustainable livelihood activities, special focus will be given to the formation and institutionalization of new and existing women's Income Generating Activity Groups.

Anticipated Outputs/ Results for Activity 4.1:

- Health, education, and sanitation services provided to nine sites, benefiting 500 households by July 2003.
- Safe drinking water and irrigation facilities provided in nine sites.
- Veterinary support provided in seven sites.
- Income generating activities including poultry farming, bee keeping, piggeries provided to 150 women by July 2003.
- Agro forestry practiced in 47 hectares of private land and 60,000 NTFP seedlings produced and distributed by July 2003.
- Empowerment of women through formation of 40 women's IGA groups, support to 32 women's IGA groups and the mobilization of 28 mother's groups.

Level of Effort for Activity 4.1:

\$58,611 USAID

Activity 4.2: Protect crops from wildlife in villages bordering the corridors

One major threat for conservation efforts in the Terai Landscape is that of wildlife and people conflict as local people and their livelihoods are threatened by wildlife species. Mitigating activities are crucial to address this problem and after identification and requests by local communities, are implemented. WWF will continue with building elephant trenches and bio-fences near sites that are highly frequented by wild animals, and planting of mentha, which provides an alternate means of income and is also safe from wildlife, which stay away due to the scent.

Anticipated Outputs/ Results for Activity 4.2:

- Reduction in incidences of crop damage by wild animals.
- 30 kilometers of bio-fences and elephant trenches built near sites that are highly frequented by wildlife, particularly in identified locations in the Bardia Buffer Zones
- 40 hectares of mentha planted in RBNP buffer zone.

Level of Effort for Activity 4.2:

\$6,088 USAID

Objective V: Support Anti-poaching Activities

Level of Effort for Objective V: \$144,624 (\$15,757 USAID; \$128,867 WWF Match)

Poaching poses a significant threat to wildlife species, and no amount of habitat restoration will result in successful conservation if present poaching levels continue. Efforts to prevent poaching on a landscape scale must be made to protect wildlife both inside and outside the parks and reserves. Currently, army patrolling is limited to protected areas and very expensive to operate. Local communities play a key role in anti-poaching efforts. Members help identify suspicious activities that involve poaching or wildlife trade, and past experience shows that local informants are very effective in helping identify and apprehend poachers. Poaching is a major problem within and outside of protected areas. In order to tackle the increasing rate of poaching and wildlife trade, TAL established 3 community-based Anti-Poaching Units (APUs) in the corridors in collaboration with the Department of Forests.

Activity 5.1: Provide training for Anti-Poaching Unit members

Anti-poaching efforts must involve educating the public as well as the government on issues such as current threats to wildlife from poaching and information on the illegal wildlife trade. This is necessary in order to have full cooperation from local people as well as to reinforce government effectiveness while combating poaching that is organized on a transboundary level. Government officials lack training on recognizing trade of tiger parts and other wildlife parts. Despite efforts of the army and park rangers patrolling in the protected areas, poaching levels have not decreased in the Terai. Further training is required of government officials including Customs and law enforcement officials about threats to wildlife, including the recognition of wildlife parts and the national movement of illegal trade. This year's activities include facilitating workshops for local communities and civil servants, such as Customs and law enforcement officials about threats to wildlife, illegal wildlife trade and how to recognize wildlife parts. Anti-poaching efforts in Nepal have suffered a setback in the previous year as patrolling of protected areas by the army declined due to the Maoist insurgency. Given that the political situation is not resolved as yet, antipoaching efforts will be supported through the training of the Department of National Parks and Wildlife Conservation to monitor wildlife trade, implement CITES law and curb poaching.

Anticipated Outputs for Activity 5.1:

- 130 APU members trained in anti-poaching operations and implementation of CITES law.
- DNPWC trained to implement CITES and monitor illegal trade of wildlife.

Level of Effort for Activity 5.1:

\$ 10,027 USAID

Activity 5.2: Design landscape level anti-poaching plan for Nepal side of the Terai

An anti-poaching plan on a landscape level will help coordinate efforts in a larger scale and amongst a wider group of partner organizations facing the same threat. Rather than being based on local needs, poaching is mostly driven by external factors. Accordingly, anti-poaching efforts must take on a landscape approach inside Nepal. This activity was delayed in FY02 given the political instability in the country. WWF will hire a consultant to prepare a regional anti-poaching plan in FY03 following consultation with APUs.

The landscape level anti-poaching plan will determine geographic locations that are vulnerable to trafficking activity as well as patterns of poaching activity in relation to species, locations, and seasons. Responsibilities for the consultant will include developing a coordination mechanism between various agencies such as park managers, District Forest Offices (DFOs), Customs, and the army and police, to control the poaching and illegal trade in wildlife parts and forest products.

Anticipated Outputs for Activity 5.2:

- Landscape level anti-poaching plan developed for the Terai in the context of Nepal.

Level of Effort for Activity 5.2:

\$5,730 USAID

Objective VI: Improve Management of Protected Areas

Level of Effort for Objective VI: \$24,089 (\$10,528 USAID; \$13,561 WWF Match)

Present protected areas require better management than what they receive at present. To this effect, park staff must be provided with adequate equipment and training. Training in the management of wildlife operations is critical for park staff who must understand animal population dynamics, vegetation and soil classification, wildlife capture and diseases, range evaluation and carrying capacity, and computer literacy in order to both supplement and read GIS data. Funding will be concentrated primarily in Royal Suklaphanta Wildlife Reserve due to security constraints in parts of extension of Royal Bardia National Park.

Habitat management is necessary to prevent further deterioration of grasslands through the natural process of succession or invasion of weeds. The grasslands are being encroached with unpalatable species and in many areas, secondary succession has taken place. With the support of USAID, park staff in Royal Bardia National Park and Royal Suklaphanta Wildlife Reserve was trained in wildlife management last year. This year, they will manage grasslands through controlled burning, uprooting of invasive species, and harrowing in a larger area of 335 ha. Their responsibilities also include the restoration and construction of 6 waterholes in Bardia and Suklaphanta, which is a dry area where tigers and swamp deer populations are on the rise. Activities will include cleaning up and renovated dried ponds as well as constructing new waterholes.

Anticipated Outputs for Objective VI:

- 335 ha of grasslands managed and restored.
- 6 waterholes constructed and restored.

Level of Effort for Objective VI:

\$10,528 USAID

Objective VII: Set up Education, Communication and Coordination Programs

Level of Effort for Objective VII: \$7,377 (\$7,377 USAID; Unconfirmed WWF Match)

Education and communication are crucial for the success of any conservation program. People's support and active empowerment in conservation can be obtained only when they understand the need to save tigers, rhinos, and elephants, which they perceive as a threat to themselves. TAL extends far beyond the boundaries of protected areas to include forest corridors and villages. Therefore, it is important that communities understand their critical role in the protection of tigers, rhinos, and elephants, which might be rare or absent in their area at present. Conservation awareness programs need to be developed for different target groups to help them understand how conserving biodiversity and ecological services benefits them. For example, people living in the Churia foothills might have a hard time visualizing how protection of Churia watershed would safeguard wildlife conservation as well as their livelihoods. Similarly, conservation staff (rangers, game scouts, and forest guards) themselves have different degrees of education and understanding of conservation needs.

Activities include developing conservation education programs aimed at different target groups, thereby increasing the understanding amongst local people and social and conservation workers on the natural history of wildlife in the Terai, success stories of conservation and consequences of habitat destruction in the region. TAL will also organize workshops and study tours to bring together local politicians, social and conservation workers to discuss conservation issues and management plans, and to organize short training courses for conservation staff, anti-poaching units, and park protection personnel units to refresh current directions in conservation.

Conservation education and capacity building being the main objective to increase people's participation, TAL will continue to support awareness programs, *gothala* (livestock-herder) classes, information dissemination, and coordination of stakeholders. Target audiences consist primarily of local communities where activities are tailored to local realities. For example, *gothala* classes were designed as a means of reaching livestock herders, mostly young children in their early teens, who take livestock and graze them in the national forests. The seven-day program consists of an outreach officer or teacher meeting with *gothala* children in each community one day per week. These classes take place in forest clearings so that the cattle can graze nearby.

Anticipated Outputs/ Results for Objective VII:

- 7 literacy classes made available to livestock-herders, women, and local communities.
- 47 environmental awareness events consisting mostly of classes, street theatres, and school competitions organized by July 2003.
- 4,000 copies of Terai Arc brochure printed in English and Nepali and disseminated amongst local stakeholders. The Nepali copies are targeted in particular to the local communities and various user groups.

- Systematic coordination mechanism developed on an implementation level for Project Executive Committees, Steering Committees and Program Coordinators by July 2003.

Level of Effort for Objective VII:

\$ 7,377 USAID

Objective VIII: Establish Research and Monitoring Program

Level of Effort for Objective VII: \$94,118 (\$37,243 USAID; \$56,875 WWF Match)

Monitoring will be critical to the TAL program. Monitoring of socio-economic conditions and monitoring of wildlife species will be set up to provide baseline data that will be used to measure the effectiveness of the program activities. Biological monitoring will be conducted at two levels i.e. site level and landscape level.

Activity 8.1: Obtain GIS Mapping and ground truthing results

Research and monitoring is critical for maintenance of species diversity and habitat restoration. Unless current baseline data is available, the means of measuring the effectiveness of project activities in relation to forest restoration is limited. Despite GIS research by various organizations on land cover and land use types, there is very little information available on current forest conditions for the Terai landscape. The basic forest cover data on the Terai dates back to the early 1980s, since which large tracts of forests have been lost. Obtaining the basic forest cover data requires GIS mapping and remote sensing techniques that will analyze satellite data from 2000 so as to establish current baseline data on forest cover conditions. This will enhance the effectiveness of forest restoration plans through the comparing of results after 3 to 5 years with established baseline data.

TAL program will continue to work closely with government departments to carry on field-testing of satellite data on established bottleneck areas and tiger breeding nodes. At present, WWF GIS experts are coordinating with DoF, DNPWC, Department of Forest Research and Survey as well as ICIMOD and other GIS agencies to update topographical maps and create historical maps of forest conditions. Activities include conducting in-depth gap analyses of forest conditions, including forest fires and maintenance and expansion of the GIS database, which was established in the first year.

Anticipated Outputs/ Results for Activity 8.1:

- Forest classification completed by January 2003.
- Vegetation monitoring protocol established by June 2003.
- GIS database expanded and maintained.

Level of Effort for Activity 8.1:

\$ 18,622 USAID

Activity 8.2: Collect baseline data to fill information gaps on wildlife in the Terai

One of the major long-term objectives for TAL is to develop a continuing research program on flagship species as well as other wildlife species so as to guide conservation and management decisions. Thus far, research has been limited to tigers and their prey species and a few other flagship species such as rhinos, sloth bears, and gharials. There are however more than 99 species of mammals in the Terai, out of which 39 species are endangered, and more than 5000 bird species, out of which more than 50 species are endangered. No detailed scientific study on wildlife species has been conducted in Parsa Reserve while research in Chitwan National Park and Bardia National Park has been limited to graduate study projects from different universities. In the past year, WWF carried out a survey on prey swamp deer in Suklaphanta Reserve, as well as baseline tiger data in protected areas. While these studies help us understand the behavior of lesser-known species, we need more detailed information that can guide our long-term conservation and management decisions. Thus, activities for this year continue with research that establishes wildlife and vegetation baseline information so as to monitor change in the long term.

Activities for collecting baseline data on wildlife include continuing population estimates for flagship species as well as lesser-known species such as the Black Buck through tract surveys, pellet surveys and scent post surveys. Building on last year's activities where the black buck area was surveyed and demarcated, TAL will continue to monitor the population near Bardia. Another survey focus will be the migrating elephant populations, monitoring movement and behavior across the Terai landscape.

Anticipated Outputs/ Results for Activity 8.2:

- Database on status of elephants established by March 2003.
- Database on blackbucks established by June 2003.
- Flagship species, and other species including swamp deer and blackbucks regularly monitored.

Level of Effort for Activity 8.2

\$ 12,892 USAID

Activity 8.3: Establish baseline data on socioeconomic conditions in corridor areas

Most projects carry out socioeconomic analysis before project development and assume that successful implementation of the projects will improve local conditions. To date, neither government nor other organizations working in the protected areas, buffer zones or community forestry programs have monitored the impact of their projects on socioeconomic conditions throughout the project cycle. Monitoring socioeconomic conditions throughout the first five-year phase of the project cycle in the pilot sites are critical. Last year's activities to gather socioeconomic data on TAL were carried over to this year and are currently ongoing. However, more specific information gaps have been identified particularly focusing on the usage of forest

resources such as fuel wood, non-timber forest products, fodder, and agricultural conversion and grazing. These activities will receive some support from WWF UK. A socio-economist will be hired to assess the economic and ecological feasibility of using NTFP extraction and marketing as a conservation strategy.

Anticipated Outputs/ Results for Activity 8.3:

- Feasibility of NTFP production as a conservation strategy produced by June 2003.
- Socioeconomic baseline data collected and analyzed.
- Use of forest resources monitored.

Level of Effort for Activity 8.3:

\$5,730 USAID

List of Key Staff Involved**WWF Nepal Office**

- Dr. Chandra Gurung, Country Representative
- Anil Manandhar, Director of Programs
- Sarala Khaling, Ecologist
- Bharat Pokharel, Program Officer
- Dhana Rai, Project Co-Manager
- Sushila Nepali, Project Co-Manager

His Majesty's Government of Nepal

- Narayan Poudel, Deputy Director General, Department of National Parks and Wildlife Conservation
- Jamuna Krishna Tamrakar, Deputy Director General, Department of Forests

WWF US

- Mingma Norbu Sherpa, Director, Eastern Himalayas and South Asia
- Dekila Chungyalpa, Program Officer
- Eric Wikramanayake, Senior Scientist
- Anup Joshi, TAL Scientist

Other Specific Program Details***Monitoring and Evaluation***

Since DNPWC lacks the budget for carrying out wildlife research and monitoring in the protected areas, TAL program will fund wildlife research and monitoring. Information on basic natural history and population trends is necessary to develop effective conservation and management plans.

Key areas for wildlife monitoring include:

- Continuation of population estimates and distribution of rare and endangered animals such as tigers, rhinos, swamp deer, elephants, etc.
- Detailed study of the least known wildlife and plant species to understand their basic biology and natural history.
- Continue protocols to monitor different species of birds and mammals.

Monitoring socio-economic conditions as a part of conservation and development projects has not been practiced widely. Most projects carry out socio-economic analysis before project development and assume that successful implementation of the programs will automatically improve local conditions. The TAL program will focus on socioeconomic monitoring.

Key areas for socioeconomic monitoring are:

- Impact of TAL programs in the use of forest resource such as fodder, fuel wood, NTFPs, and grazing.
- Impact of increased wildlife population on agriculture.
- Document change in household living standards by measuring change in their land holding size, education, use of energy efficient techniques to reduce their dependency on forest, and additional income through off-farm income generation activities.
- Change in people's attitude towards conservation in general and role of forest corridors in particular as a result of change in economic conditions.

Framework for Determining Success of Program in Pilot Sites

The purpose of the Terai Arc Landscape Program is to connect national parks in Nepal and India through wildlife corridors for the long-term viability of wildlife populations, while simultaneously benefiting local communities. Accordingly, the success of the program will be measured by:

1. Protection of Habitat
2. Protection of Wildlife Species
3. Well-being of Local Communities.

The indicators for success have been distributed amongst 7 immediate Activities, explained in detail in the implementation plan.

General indicators for determining the success of the program in the pilot sites are outlined below. We would like to stress that several of these indicators overlap with each other due to the inter-connecting nature of these issues.

1. Protection of Habitat

Indicators for Success:

- Restoration and regeneration of a minimum of 180 ha of forest land
- Establishment of a minimum of 250 ha of forest plantation
- Area of degraded forest lands handed over to local communities by government
- Number of Community Forest User Groups established

2. Protection of wildlife species**Indicators for Success:**

- Minimum of two Anti-Poaching Units supported
- Level of apprehension of poachers through anti-poaching activities
- Improved habitats for wildlife in protected areas – number of waterholes etc.

3. Improved well-being of Local Communities**Indicators for Success:**

- Increased levels of participation in CFUGs
- Increase in women's empowerment, demonstrated through participation in decision making and implementation of community activities
- Implementation of community development plans that incorporate health, education, gender sensitization, safe drinking water, and other such needs
- Development of alternative income generation and off-farm activities

Financial Sustainability

The Terai Arc program is a long-term commitment, one of fifty years, because conservation at this scale requires long time horizons to achieve targets that will benefit several generations. Thus, WWF is working with experts in conservation finance and large program management to produce a business plan to ensure long-term financial sustainability of this venture. Moreover, WWF will help to establish a trust fund that will provide sustainable funding of the project on a long-term basis. This Conservation Fund will serve as a transparent and efficient conduit for funding some of Terai Arc program related activities, building an “endowment” that will, over time, provide sustainable and reliable funding for the ongoing work in the Terai. Financial sustainability is also assured through the full endorsement of the Terai Arc Landscape by HMG of Nepal as demonstrated by the inclusion of TAL as a priority program in Nepal's 10th five-year plan.

Travel

WHO	FROM	DESTINATION	NUMBER OF TRIPS	PURPOSE
WWF US Staff	Washington, DC	Nepal	2	Coordination, management and technical assistance from headquarters staff

Annex

Annex A. Upper Paraná Atlantic Forest Ecoregion Biodiversity Vision

The Atlantic Forest Ecoregion Complex

The Atlantic Forest Global 200 Ecoregion Complex of Brazil, Argentina, and Paraguay, composed of 15 ecoregions, is among the most endangered tropical rainforests in the world, with just 7.4 percent of its original 1,713,535 square kilometers of forest cover intact. In spite of its highly fragmented condition, the Atlantic Forest remains one of Earth's most biologically diverse ecosystems. Forty percent (8,000 species – 2.7% of all plants on the planet) of the Atlantic Forest's 20,000 plant species are found nowhere else on earth. Forty-two percent (567 species – 2.1% of the planet's terrestrial vertebrates) of the Atlantic Forest's 1,361 terrestrial vertebrates are found nowhere else.¹ Over 52 percent of the Atlantic Forest's tree species and 92 percent of its amphibians are found nowhere else on the planet.

In addition to containing some of the world's rarest species, what remains of the Atlantic Forest is directly associated with the quality of life of the human population. Forests are vital to watershed protection, prevention of soil erosion, and to maintaining environmental conditions necessary for the existence of cities and rural areas.

As the first part of Brazil to be colonized by the Portuguese in the early 1500's, the Atlantic Forest has developed into the population hub of the country. Eighty percent of Brazil's GNP is produced in this region. In contrast, the isolation from human population centers of the Argentine and Paraguayan portions of the Atlantic Forest has allowed the preservation of the largest piece of Atlantic Forest in Misiones in Argentina and eastern Paraguay. The habitat destruction and fragmentation in the ecoregion coupled with the high levels of species endemism make conservation action particularly urgent.

The Atlantic Forest extends from a tropical latitude on the northeast coast of Brazil to a highly seasonal subtropical latitude in southern Brazil and Argentina. It extends from the Atlantic Ocean westward to the interior over Brazil's coastal mountain range to the watershed of the Paraná River in eastern Paraguay and Misiones Province of Argentina. The biodiversity of the Atlantic Forest is not evenly distributed as different combinations of temperature, altitude, soils, and rainfall along this range have created conditions for unique groups of species to evolve in localized areas. To design a conservation strategy that would ensure the long-term survival of a representative sample of the complex biodiversity of the Atlantic Forest, WWF scientists and partners have divided the Atlantic Forest into 15 units - ecoregions - for analysis to identify biological goals and long-term conservation strategies to achieve them.

The Upper Paraná Atlantic Forest Ecoregion

We have begun this analysis with the Upper Paraná Atlantic Forest ecoregion, the ecoregion with the largest remaining forest blocks. Although these blocks represent an important conservation opportunity they cross the borders of three different countries where three different languages (Portuguese, Spanish, and Guaraní) are spoken. The ecoregion's complex socio-economic and cultural diversity presents challenges to developing a coherent conservation strategy.

The original forest of the Upper Paraná Atlantic Forest ecoregion covered the largest area (approximately 400,000 km²) of all the ecoregions of the Atlantic Forest complex, extending from the western slopes of the Serra do Mar in Brazil to eastern Paraguay and the Province of Misiones of Argentina. Mainly due to agricultural expansion westward in Brazil (coffee in the late 19th century and in the past 50 years for wheat, soybeans, sugar cane, and

¹ Norman Myers et al. "Biodiversity hotspots for conservation priorities" pp. 853-858 in *Nature*, vol. 403, 24 February 2000.

oranges), the forest has been reduced to only 7.8% of its original extent. In Brazil, only 2.7% (771,276ha) of the original forest cover of this type remains, including the Iguaçu National Park and a few smaller forest fragments - virtually none outside protected areas. Relative isolation from human population centers in Argentina and Paraguayan portions of the Upper Paraná Atlantic Forest has allowed the preservation of the largest area of remaining Upper Paraná Atlantic Forest in those two countries. Approximately 1,123,000ha (about half of the original forest area of the ecoregion in that country) remain in Argentina, forming a contiguous corridor covering a large part of the province of Misiones. Although Paraguay retains a large area (1,152,332ha) of Upper Paraná Atlantic Forest, it is only 13.4% of the original area in that country. Recent deforestation in Paraguay (with one of the highest deforestation rates of any country in Latin America) has fragmented the remaining forest.

The predominant vegetation of the Upper Paraná ecoregion is semideciduous sub-tropical forest. Local environmental variations allow for the occurrence of other plant communities - gallery forests, bamboo forests, and araucaria (or Brazilian pine). The natural characteristics of the region form an extremely rich habitat harboring countless species of animals, among them the spectacular large cats – the jaguar, puma, and ocelot. Other common mammals include tapir, two species of brocket deer, coati, and four species of monkeys. More than 300 species of birds are found here, including five species of toucans. Some of these are considered endangered or threatened, like the black-fronted piping guan, the solitary tinamou, the Brazilian merganser, the vinaceous amazon parrot, the bare-throated bellbird, and the harpy eagle.

The Upper Paraná Atlantic Forests play an important role in the conservation of watersheds, assuring the water quantity and quality essential for the conservation of the Upper Paraná River, a globally important (Global 200) freshwater ecoregion. With a remarkably diverse fauna, including more than 300 species of fish in addition to diverse aquatic vertebrates and invertebrates, the Upper Paraná ecoregion has a high degree of endemism of freshwater species. In addition to the deforestation that drastically affects the watersheds, dams are a significant threat. The rivers of this ecoregion are also the principal source of hydroelectric energy for the population centers of Brazil, Paraguay, and Argentina.

Ecoregion-Based Conservation - *planning and action at multiple scales*

Most conservation efforts around the world have been organized around country or sub-regional programs, consisting typically of projects that are restricted to relatively small areas (e.g. a community-based project, buffer zone program, or protected area) for relatively short periods of time (1-3 years). These projects are the building blocks of conservation; however, to halt the global extinction crisis that we now face, we must conduct conservation planning over larger spatial scales and longer time frames than ever before. This task requires analysis and planning at the level of landscape or larger scales, with most actions implemented locally.

Working intensively with partner organizations in Brazil, Argentina, and Paraguay, WWF has developed a comprehensive biodiversity vision for the Upper Paraná Atlantic Forest ecoregion that expands the current scale of thinking and action from individual protected areas or forest fragments to include consideration of large-scale phenomena occurring across park, community, and country borders. Limiting our conservation planning and actions to protected areas, for example, will not adequately address the threats to the ecological processes, which maintain the biological diversity. Landscape level planning and action at the ecoregional scale and for the long term are essential to achieve conservation results and to link human development opportunities to that which sustains life on Earth - biological diversity.

A Biodiversity Vision - What is it?

A biodiversity vision is a blueprint for conservation action - a design of what the ecoregion's biodiversity will need to survive over the long term.

The WWF Upper Paraná Atlantic Forest ecoregion program is already mobilizing short-term action - developing partnerships, identifying key policy actions and capitalizing on ongoing projects that contribute to meeting critical biodiversity targets based on the existing knowledge of biodiversity, opportunity, and constraints in the ecoregion. But while promoting short-term actions, we also need to lay a foundation for long-term (50 to 100 years) biodiversity conservation. This demands crafting a *biodiversity vision* that defines biodiversity goals in terms of representation, resilience, viable populations, and ecological processes, which should be accomplished over the next fifty years. This broad vision is meant to capture the major elements of biodiversity and serves as a fresh

organizing concept from which to frame actions, projects, trade-offs, threats, opportunities, partners, and stakeholders. The vision highlights areas in which special attention should be paid to factors such as land- and resource-use planning, watershed management, and social and economic development.

Conservation Principles

The Vision has been produced using the best available scientific knowledge and tools. Conserving the biodiversity of the Upper Paraná Atlantic Forests ecoregion does not mean that every individual of every species must be protected. Our conservation strategy must work toward achieving the broad goals of biodiversity conservation (adapted from Noss, 1992) widely adopted as the foundation of the science of conservation biology:

1. **Representation** within a protected area network and conservation landscape - all native ecosystem types and seral stages across their natural range of variation
2. **Resilience** - conserve blocks of natural habitat that are large enough to be responsive to short-term and long-term environmental change and to maintain the evolutionary potential of lineages
3. **Viable Populations** - maintain viable populations of all native species in natural patterns of abundance and distribution
4. **Healthy Processes** - maintain ecological processes and selective factors such as disturbance regimes, hydrological processes, nutrient cycles, and biotic interactions, including predation.

Important Features for Developing Biodiversity Conservation Objectives for the Upper Paraná Atlantic Forest Ecoregion

In contrast with most other ecoregions of the Atlantic Forest ecoregion complex, large blocks of native forest within a highly fragmented general matrix characterize the Upper Paraná Atlantic Forest ecoregion. Ninety-three percent of the Upper Paraná Atlantic Forests ecoregion is made up of cities, private lands, areas of large-scale and of subsistence agriculture. About half of the 4,136,371 hectares of original forest remaining in the ecoregion and its buffer zone (See Annex 2 – Map of remaining forest.) is fragmented into 23,249 isolated areas each less than 10,000 hectares while the other half of the remaining forest consists of 27 fragments larger than 10,000 hectares and 3 fragments larger than 100,000 hectares. Nearly all of the fragments over 10,000 hectares are under some type of legal protection, but most of these areas are not effectively protected.

Distribution by Size of Forest Fragments
Upper Paraná Atlantic Forests Ecoregion (including buffer zone)

Size	Number of Fragments	Hectares	% of total ecoregion area
Larger than 100,000ha	3	1,387,443	33.54
10,000ha – 100,000ha	27	623,681	15.08
1,000ha- 9,999ha	263	691,472	16.72
500ha-999ha	325	225,995	5.46
100ha – 499ha	2959	589,814	14.26
5ha-99ha	18,875	616,200	14.90
Less than 5ha	827	1,765	0.04
	23,279	4,136,371	
Total			100.00

There is very little information available on current or past species distribution in the ecoregion. The large forest blocks have permitted the conservation of umbrella species such as jaguars (10,000 ha of forest can support only one male jaguar), eagles, and white-lipped peccaries that indicate the maintenance of high biodiversity and the principal ecological processes. However, the high fragmentation of the rest of the remaining forest has the consequences of current and future loss of biodiversity and reduced resilience. The conservation value of these small fragments should be further evaluated.

A Common Vision for the Upper Paraná Atlantic Forest Ecoregion

During the last three years, WWF has led a Tri-national participatory process involving more than 30 local organizations representing multiple sectors and disciplines to develop a vision for the time frame and geographic scale necessary to conserve the Upper Paraná Atlantic Forest Ecoregion's biodiversity. The resulting vision will continue to be refined over time as additional information becomes available, but it is already serving to mobilize and focus conservation activities of these multiple partners around common 50-year objectives as well as beginning to harness the support and involvement of stakeholders.

We have identified two main goals:

- Maintain environmental services critical for human quality of life;
- Ensure the long-term viability of the biodiversity and reduce the probability of further species extinctions.

Our vision is a Tri-national Corridor (See attached map) – a landscape of conservation and sustainable use of approximately 6,044,361 hectares of the original area of the Upper Paraná Atlantic Forest Ecoregion and its buffer zone (40,134,268 hectares) - that includes:

- Approximately 1,933,610 of **core areas (large blocks of well preserved native forest)** where biodiversity is maintained through limited human activities;
- **Biological corridors of native forest linking the core areas**, permitting gene flow to ensure the long-term survival of wildlife populations;
- Approximately 4,785,440 hectares of **zoned sustainable use areas**, where landowners implement conservation and sustainable use activities while ensuring the maintenance of environmental services.

The **core areas** are the blocks of well preserved native forest large enough to be resilient to threats causing biodiversity loss. These are the most biologically important and strategic zones for conservation, either public or private. In addition to harboring biodiversity they make an important contribution to the maintenance of environmental services (such as carbon sequestration, balance and quality of water supply, and aesthetic landscape) important for human quality of life. Here human activities must be reduced to a minimum and be of low impact. Each core area should be managed to maintain an area of continuous native forest large enough for the whole life cycle of large range species such as jaguars and white-lipped peccaries.

The **biological corridors** are relatively narrow areas of native forest, either natural or restored, that connect large forest patches, either core areas or sustainable use areas, to allow the movement of the wildlife and sufficient genetic interchange to maintain viable populations.

The **sustainable use areas** are large areas that function as buffers and connections surrounding the core areas and biological corridors. They maintain environmental services in combination with “environmentally friendly” economic activities such as ecotourism and production of “yerba mate”, “palmito” (palm heart), timber, and non-timber forest products. In 50 years, these areas would be managed under land use plans or zoning based on social, environmental, and economic sustainability principles. This land use plan should include native forest protecting the watersheds and biologically important areas, a network of biological corridors, and economic activities. Within the sustainable use areas, fine scale analysis to complete the land use plan may identify additional core areas and biological corridors.

An Ecoregion Action Strategy – Integrating Strategic Planning and Action

The design of the Tri-national Forest Corridor was based on an analysis of the best available information on biological needs of plant and animal species and socio-economic needs and opportunities of the human population. Since no one organization can achieve results at this scale, actions must be coordinated among governmental and non-governmental organizations of many sectors. Achieving this vision will require governments to incorporate it into their regional development programs and policies. Maintaining intact forest in the core areas will require improved implementation of existing protected areas both public and private. New protected areas must be

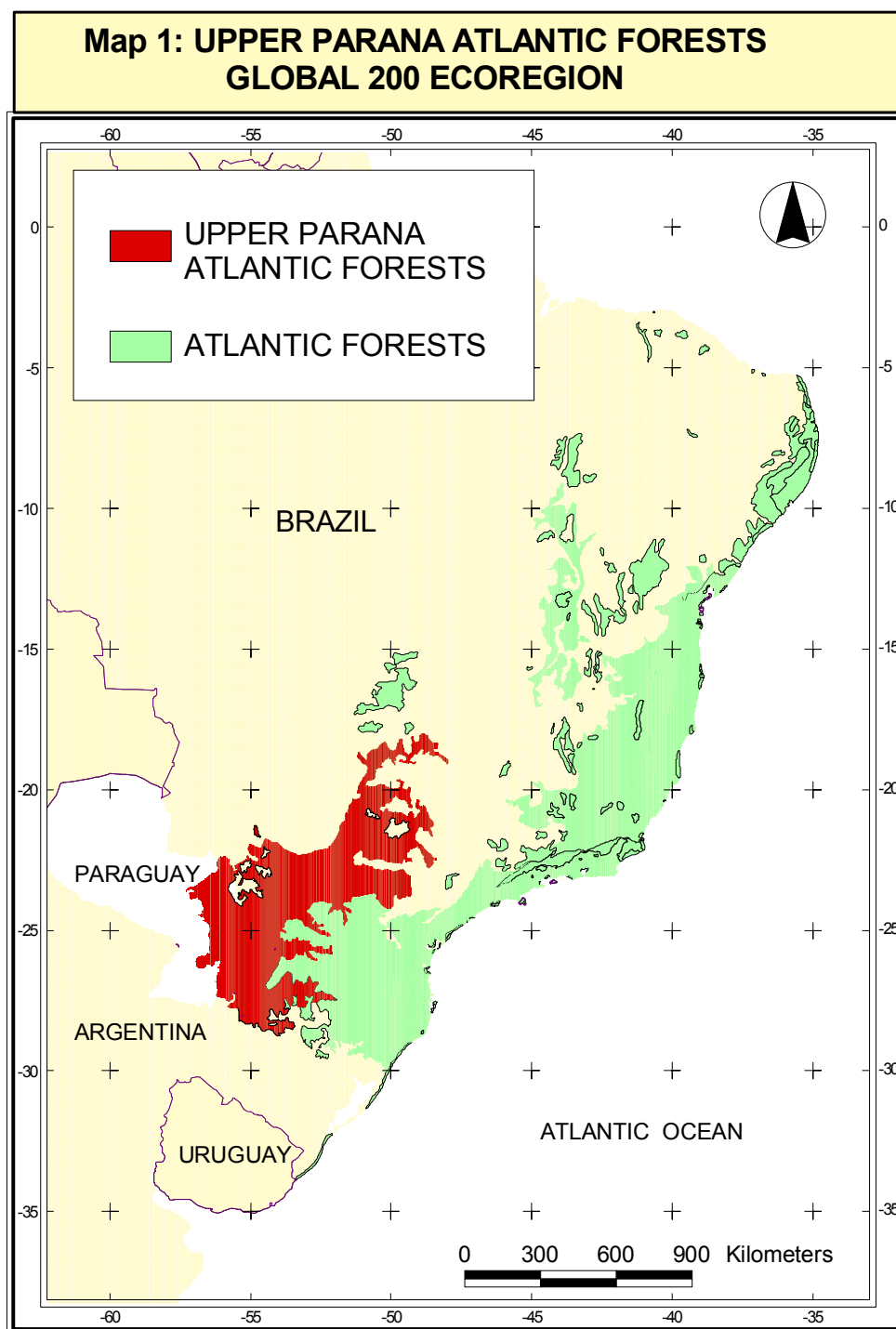
established. The connections among core areas can most easily be secured through the establishment of forest corridors crossing landscapes of multiple use zones that provide services valuable for people. Design of these corridors and multiple use zones will require fine scale land use planning with the participation of stakeholders so as to develop their support for implementation. New environmentally friendly and economically viable production alternatives as well as incentives for the protection of forest on private land (both large and small holdings) must be developed. Large-scale education campaigns will be essential to increase public understanding of the value of protected forests and thus generate public support and involvement in Atlantic Forest conservation – including enforcement of existing forest laws and development of improved new public policies where necessary. Capacity building is also essential for landowners, both public and private, to become effective stewards of forested areas. To implement many of these activities will require new basic and applied research in areas such as forest restoration, economic and biological sustainability of alternative land uses, needs assessments for communication and education efforts, land use planning, biogeography, and in economic mechanisms to sustain conservation.

With the biodiversity vision as a guide WWF and local partners are in the process of transforming short-term actions already underway to an *ecoregion action strategy* which lays out targets over the short (1-5 years) and medium (10-15 years). This strategy should clearly identify threat-mitigation strategies, and focus on clear targets for conservation achievement as well as the roles of partner institutions, long term financing possibilities, structures for governance, communication and campaign activities, capacity building, and other important strategies. These clear targets are essential to guiding, focusing and monitoring progress. Together with an inspiring vision, the clear targets and transparent reporting of achievements are necessary to build the commitment and ownership of partners to stay actively engaged. Imbedded in the crafting of an ecoregion action strategy is the need for flexibility so that as more information is collected, and actions are monitored, the strategy can be easily updated and allow for sound judgment when a change of course or tactic is necessary. In addition to helping the ecoregion action programs organize their strategic efforts in an ecoregion, the strategy has other benefits. The ecoregion action strategy document can help openly articulate the biodiversity agenda, and can help leaders recognize the importance of this agenda among other national and international priorities. It is clear that appropriate institutional development of partners is necessary to strengthen advocacy at several scales. Since Brazil, Argentina, and Paraguay are all recently emerging democracies, this capacity building overlaps significantly with the development of active participation in government and taking an active role as citizens.

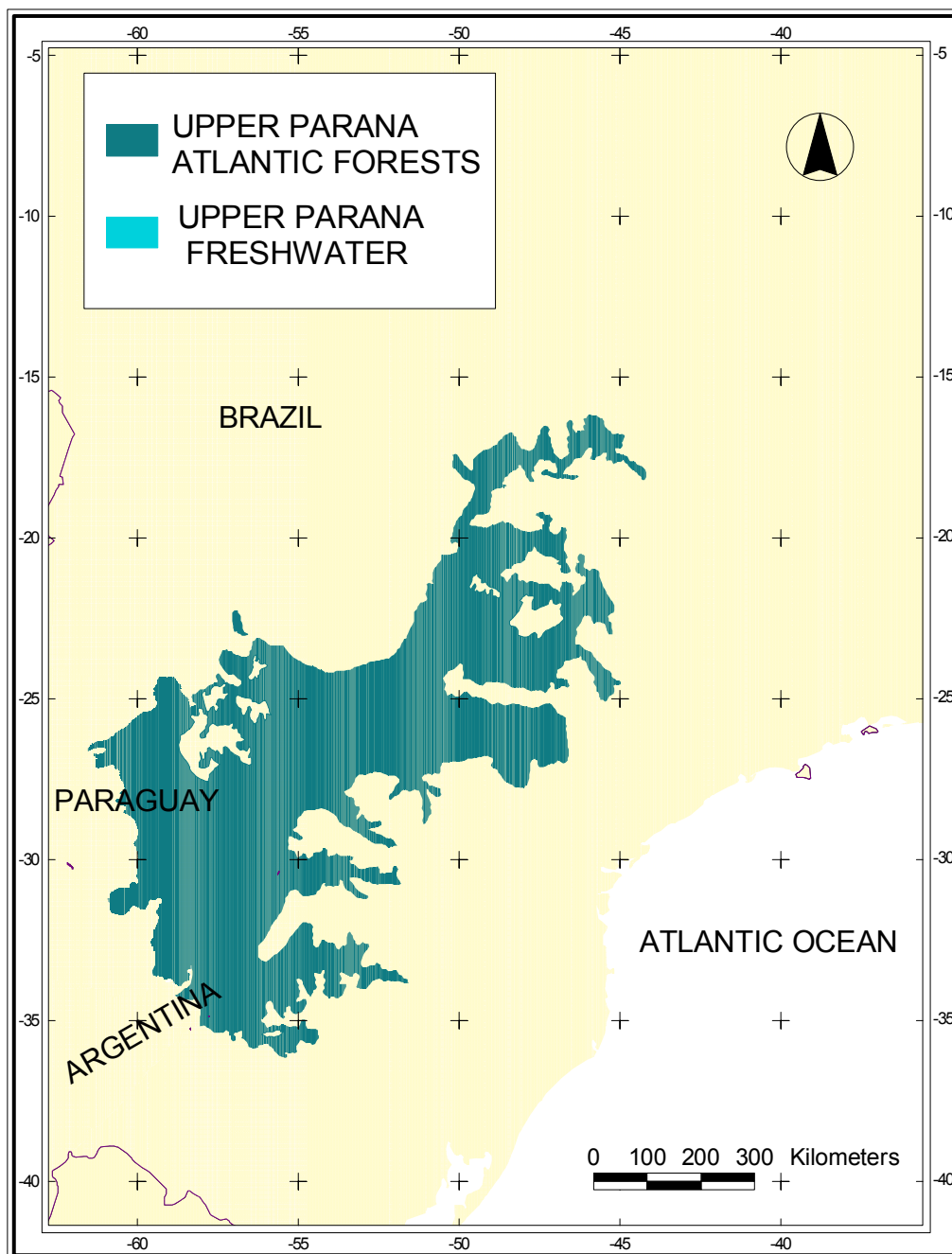
Implementation may take place at levels below the ecoregional scale, or outside the ecoregion, depending on the issue under focus. Threats analysis is an essential filter for determining at what scale we should act. All conservation activities must be conceived and implemented in relation to the social and political realities in which they take place. In the Upper Paraná Atlantic Forest ecoregion these realities are different in each of the three countries and in different regions of the same country. Most of the actions will be implemented at a national scale or a regional scale within each country. However, strategic planning, monitoring of the threats and conservation results, and adjustments must be conducted at an ecoregional scale.

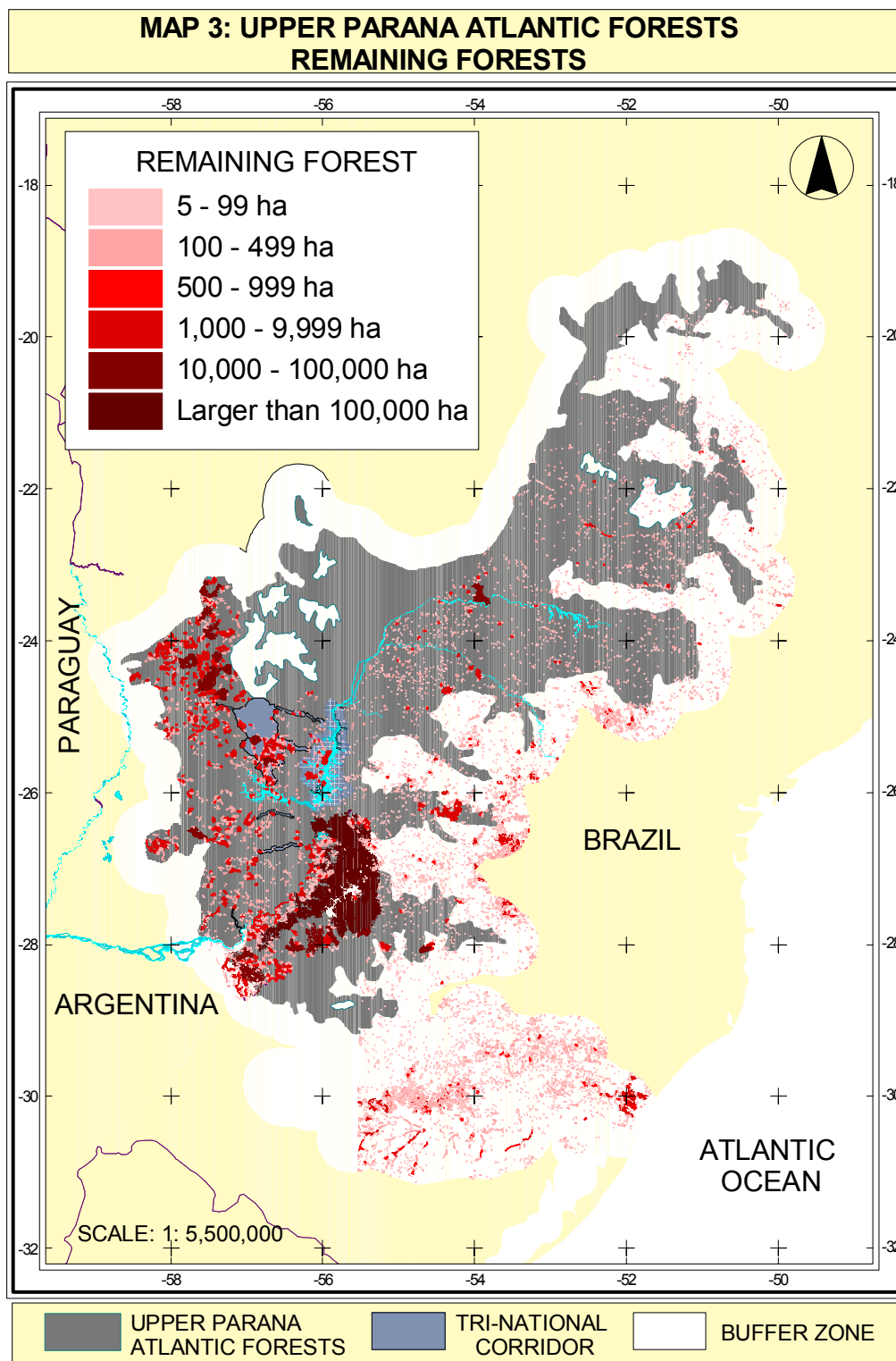
Annexes:

1. Map - Upper Paraná Atlantic Forests Global 200 Ecoregion, showing location in South America.
2. Map - Upper Paraná Atlantic Forests Global 200 Ecoregion and Upper Paraná Freshwater Global 200 Ecoregion
3. Map - Upper Paraná Atlantic Forests Ecoregion – remaining forest
3. Map - Upper Paraná Atlantic Forests Tri-National Corridor, showing sustainable use areas, core areas, and biological corridors.



**MAP 2: UPPER PARANA ATLANTIC FORESTS GLOBAL 200 ECOREGIONS &
UPPER PARANA FRESHWATER GLOBAL 200 ECOREGIONS**





MAP 4: UPPER PARANÁ ATLANTIC FORESTS TRI-NATIONAL CORRIDOR, SHOWING CORE AREAS, SUSTAINABLE USE AREAS AND BIOLOGICAL CORRIDORS

